The Horse Book

By

J. H. S. JOHNSTONE

Lula Johnson

first edition

Extremes meet.—The famous American-bred gelding, Big Jim, and a Shetland Pony in an English show ring

The Horse Book

A PRACTICAL TREATISE ON THE AMERICAN HORSE BREEDING INDUSTRY AS ALLIED TO THE FARM

By J. H. S. JOHNSTONE
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PUBLISHERS' PREFACE

In the year 1885 Mr. J. H. Sanders, founder of The Breeder's Gazette, brought out a little volume entitled "Horse Breeding," which for a period of nearly twenty-five years has stood as the standard authority on the subject to which it was devoted. It passed through many editions in this country, besides being translated and republished in Germany. The "whirligig of time," however, has now rendered it desirable that the old work be supplanted by something more modern; hence the appearance of this volume at this time.

Since the death of Mr. Sanders Sr. in 1899 the heavy end of the editorial work in connection with the horse department of The Breeder's Gazette has been carried by Mr. James H. S. Johnstone, former editor of the Chicago "Horseman." In his capacity as Assistant Editor of The Gazette during the past eight years, he has had exceptional opportunities for perfecting his already broad practical knowledge of the horse. It was believed, therefore, that no writer upon this topic in the United States at this date was better equipped to undertake this task.

It will be noted that in the preparation of this volume no effort has been made to deal with the horse as relates to the race course.

The work is designed primarily to be of practical value to those who have in view the production of the types of horses in general request upon the farms and in the market places of the United States. Furthermore, it has not been deemed advisable to encroach to any appreciable extent upon the special province of the veterinary surgeon. It is submitted, therefore, as an aid to those who are engaged in the breeding and handling of the every-day horse of commerce; and in that field it is believed that "The Horse Book" will meet an actual need.

The author desires us in this connection to express his special indebtednes to the present Managing Editor of The Breeder's Gazette, Mr. Alvin H. Sanders, for valuable suggestions in the preparation and revision of the manuscript.

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PART I.

CHAPTER I.

ORIGIN OF THE HORSE.

Every animal as we see it today is the result of a long and tedious process of evolution. Time, geologically speaking, is measured in ages, and as we find the first definitely accepted ancestor of the horse preserved in fossil form in the Eocene formation of the rocks we may, according to the general belief, place the date of this ancestor somewhere about three and one-half millions of years ago. Succeeding and higher forms persist through the newer formations in the earth's crust until we reach the Prehistoric and Historic horses, the remains of the former being found upon the earth's surface and the story of the earliest of the latter being preserved in rude sculpture. None of the geological or Prehistoric prototypes of the horse was large, the greatest height having been probably about 13 hands. It is impossible to trace the descent of the horse without the use of scientific terms, and for such use I crave indulgence.

Ancestor to all hoofed or ungulate animals is the Phenacodus primaevus, which has therefore been established as the progenitor of the horse.

This was a small animal having five digits or toes on each of its four limbs. Its second, third and fourth toes were furnished with hoof-like protection and its fossil remains are found in Europe as well as in America. It lived in swampy regions and the subsequent hardening of the ground rendered necessary the evolution of a foot of the type possessed by the horse of today.

Strangely enough, though there were no horses on the American continent when it was discovered by the Spaniards, the genus was evolved here and is believed to have crossed into Asia over ground that at some remote period connected the most northwesterly portions of our continent with the most easterly confines of Siberia. Profs. Marsh of Yale and Osborn of the American Museum of Natural History have been chiefly instrumental in tracing the geological history of the horse.

Next in line of descent to Phenacodus is Eohippus, which name may be translated as meaning the dawn or beginning of the horse. This was about the size of a fox, about 11 inches high, and in it the first toe had entirely disappeared and the fifth was represented only in vestigial form in the hind legs. Protorohippus followed, probably about 18 inches high, much like its predecessor, but lacking the fifth toe on all its legs. Orohippus following presented an appearance closer to that of the horse and had

Restored fossil skeleton of Eohippus, similar in size to whippet dog, eleven inches high

Photo from American Museum of Natural History

ASIATIC WHITE ASS

four toes in front, the fourth disappearing, and three only behind. In Mesohippus there are but three toes, the fourth being represented by a splint. In Miohippus there are also three toes and a very rudimentary splint, the second and fourth toes disappearing, thus leaving this ancestor of the horse to walk on his third or middle toe. In Protohippus the second and fourth toes are smaller still. In Pliohippus these toes are represented by splints, which in a still more rudimentary form exist to this day.

In Pliohippus we see the first real soliped or solid-footed animal in this descent, and the animal was distinctly of a horselike type. Thus may we trace the evolution of the one-toed horse from his five-toed ancestor. Besides the splint bones we have in further evidence of this evolution from a soft-footed ancestor the footskin which entirely covers the soft structures of the horse's foot from the horny box which protects them—the hoof, which was evolved to withstand the resistance of the hardened ground. There are various other proofs of the descent as outlined, but these need not be dealt with here. There are some other intermediate links, but the line followed gives the main steps in the evolution of the horse as arranged by Marsh.

Pliohippus was prevalent in all the great continents. How the horse was extinguished in America we do not know. It was, however, in Asia south of the Altai Mountains in Mongolia,

and directly in the line of the supposed migration that what is considered to be the wild type of horse was discovered by Prjevalsky, a Russian traveler. Since 1881 several specimens of this species have been brought into captivity and its habits studied in the region to which it is indigenous. This species attains a height of from 12 to 13 hands. Between Pliohippus and the Prehistoric horse there is a gap in the line of descent differently filled by various authorities. It was at this period that the genus branched into the three species now represented by the horse, the ass and the zebra.

Of the Prehistoric horse we read the record in his fossilized bones found in caves, left there by the men of the Older Stone Age, the Newer Stone Age and the Bronze Age. Horses seem then to have been used only as human food and it cannot be determined when they were first made subservient to the will of man to carry him or to work. Some of the Prehistoric horses partook largely of the character of the ass and it is probable that Prjevalsky's horse corresponds quite closely to some of the later forms of that step in equine evolution or forms a sort of a connecting link between the Prehistoric and the Historic races.

Scientifically the horse, the ass and the zebra form what is known as the genus Equus. The Nubian Wild Ass is the nearest the original type of ass and from it all our domesticated

PRJEVALSKI'S HORSE

BURCHELL ZEBRA

asses are descended. The Mountain Zebra occupies the same position for that species. Specific differences between the horse and the ass are many, but the chief perhaps are that the ass has but five lumbar vertebrae, the horse six; the ass has chestnuts on two legs, the horse on all four; the ass brays, the horse neighs. Position is accorded Prjevalsky's horse as defined in part because it has only five lumbar vertebrae, yet its other characteristics place it among the true horses.

Crossing is freely accomplished among members of the three species of this genus. The result of such crossing is termed a hybrid. The most common is between the horse and the ass and this mating appears to have been made at a very early date, though in which direction we do not know. Progeny of the male ass and mare is called a mule, that of a stallion and a female ass a hinny. Progeny begotten by the male zebra from mares is now comparatively common and is termed zebroid. In all cases these hybrids are absolutely sterile. Allegations to the contrary have been made, but proof without flaw or loophole is so far wanting.

War and the chase having been, beyond that of food for man, the primal uses to which the horse was put, and as improvement would naturally follow domestication, we must look in Asia or North Africa for the first advances toward the strength to carry men and later in

speed. The Arabian, now said to be of North African origin, is probably the oldest established type of improved horse, his ancient preeminence being due to the military prowess of the peoples erstwhile inhabiting a wide but ill-defined area in Eastern Asia. Westward in Europe horses grew larger and when the Saracenic invasions brought the famous clouds of eastern warriors under the crescent of Islam into France and Spain, the strains interlocked and the foundation for the modern equine superstructure was mortised together. From Spain Cortez brought the first horses ever landed on American soil when he began his romantic conquest of Mexico, on March 24, 1519. Conditions proved ideal for their multiplication and to the mounts of the mere handful of Spanish cavalry which followed the fortunes of the Great Conquistador may be traced the inception of horse breeding on this continent.

CHAPTER II.

HEREDITY AS A FORCE.

Heredity is the biological force which tends to enable parents to transmit their physical and psychological characteristics to their offspring. In improved domestic animals this force has little strength of itself. As a factor in successful breeding it is not so powerful as environment. Unless this force is properly directed and suitably environed its effects in improvement are negligible. The natural tendency of all improved live stock left to itself is toward degeneration, not improvement. Hence in considering the amelioration of animals we must pay due heed to the breeder's personal equation. One man succeeds and another fails, both using the same foundation stock. A very complex problem is faced by the breeder. There are no hard and fast rules by which success may be attained. Natural opposition, always trending downward, must be overcome. Superior individuality and good pedigree are necessary to the production of high-class animals, but they are of comparatively small value unless they are surrounded by proper conditions and the forces of heredity are directed aright. The longer I live and the more I see of men and

horses the less weight do I grant to heredity and the more to environment and the personal equation.

Heredity has been supposed to fix type. It does with certain conditions and it does not without. Wild animals are of truly fixed type; improved domestic animals are not. The Nubian lion is the same today as he was 1,000 years ago; he will be the same tomorrow and 1,000 years hence, if the conditions under which he lives remain the same. There has been no admixture of alien strain in his blood. He is not a composite and therefore he is immune from variation, the law of which no one understands, the operation of which no one can foresee, which is sometimes in advance, generally in retrogression.

All improved breeds are of recent origin and all are composites. The good, the bad and the indifferent are to be seen in them all. If we accept the types of the wild animals as fixed, then we must admit that the types of improved animals are not fixed. Compare any of our improved breeds with the wild goose or the buffalo for an illustration. Admitting that heredity is one of the fundamental principles with which the breeder has to deal, we must grant that any animal is an aggregation of the essential elements of all his ancestors, the influence of these ancestors decreasing as they become more remote. Nevertheless the tendency to revert to

the characteristics of some ancestor is unconquerable and this atavism, as it is called, must be reckoned with always as well as variation. These tendencies must of necessity be met with more frequently in improved breeds of recent and composite origin and varying environment than they are in wild animals which have bred without alien blood and without change of surroundings for an indefinite period of time. Hence improved animals bred and selected for many years with one fixed object in view must more strongly transmit their characteristics to their offspring than those which have resulted from hap-hazard matings.

Natural selection is governed by the inexorable law of the survival of the fittest. Matings of improved stock are often ordered at random, without due regard to true fitness, and be it said for the great mass of breeders comparatively seldom with a definite ideal in view. Even the greatest breeders have never collectively directed their efforts along exactly the same line. Therefore we have types and types within the same breed. An inexorable law, always without change, has ordered the selection of parents in the wild races. Crossed this way and that within itself, an improved breed presents sometimes as many types as there are great breeders and the great majority of the animals within the breed can not be called typical at all—they lack the touch of the master

hand. There has been continuity of effort only here and there. Environment has been vastly different. Thus must we reach the inevitable conclusion that the personal equation and environment, as directors of the forces of heredity, are the chief factors in domestic animal breeding, while the propagation of the wild animals is governed by an inexorable law which knows no change. The cases are not similar.

All this forms a condition, not a theory. There is nothing in it to discourage any one from undertaking the breeding of improved domestic animals. Its lesson simply is that when he undertakes that work the breeder must make up his mind to face a problem full of complexity in which the natural tendency is downward rather than upward. Too much stress has hitherto been laid on the force of heredity, too little on the personal equation and environment. The travesties on our improved breeds which one sees on every hand are proof enough of this contention.

Size in draft horses and action in high-steppers are soon lost whenever the environment which produced these characteristics is changed. The Percheron, the Clydesdale or the Shire allowed to breed indiscriminately on the range ceases after a time to be a draft horse and becomes a range horse, because his range environment is stronger than the draft inheritance bequeathed to him. On the other hand we may

take the instance of the range-bred polo pony as proving the converse of this proposition. Common range mares are mated with Thoroughbred stallions and the foals are suitably environed. In this way we breed the best polo ponies on earth. Allowed to run on the range with their mothers these foals, not subject to the environment which makes polo ponies, develop into common rangers.

Approaching the problem of what heredity will do for us, parents will transmit a measure of their joint individuality to their offspring. Thus if we mate a stallion and a mare both pronouncedly drooping in the rump, the foal will almost to a surety exhibit that faulty conformation. Hence it follows that when either parent has some undesirable characteristic great care should be exercised to select the other very strong in that particular point. These undesirable factors in conformation seem to be transmitted with greater force and certainty than those which we most desire. If we use stallions and mares of low grade we are merely inviting the production of doubly inferior progeny. Heredity is not altogether impartial in this matter. The best stallion will only beget a certain proportion of his offspring good. The inferior stallion will beget progeny, a large majority of which will be bad—this of course presupposing that the mares will average with the horse. If

the mares are inferior to the inferior stallion there can be no hope of salvation by his use.

If, as has been insisted, the sire and dam had each a set share in contributing to the inheritance of the offspring, then breeding would be a business of rule of thumb—which it is not. We do not know how these respective shares are arranged. What we do know is that the joint individuality in varying proportions is transmitted to the offspring more or less definitely and this supplies the reason for the selection of high-class parents as the foundation for the further work of development by suitable environment. In this discussion I have not taken into consideration the transmission of equine speed, as that is an elusive spark, is not transmitted as conformation is and has no bearing on the breeding of animals other than the race horse, though subject in all ways to the influence of environment.

Admitting that a horse is a composite of all his ancestors, a long pedigree is desirable only insofar as it shows that these ancestors were good individuals and typical of the breed concerned. A pedigree showing a heterogeneous mass of individuality is of doubtful value. In an animal possessing such a pedigree the tendency will be to breed unevenly for the reason that his ancestors were not even. The force of heredity is weakened in such cases because of

the diversity of directions in which it has been employed.

To invoke the aid of heredity then as an ameliorating agent we must select breeding stock with lines of good ancestors behind them, as well as good individuality in them. In such the especial type desired must be more firmly fixed than in those which have been promiscuously bred within the breed or crossed out of it altogether. The inheritance has been intensified in the one, diversified in the other. Taking advantage of this intensification and subjecting its results to proper environment we may proceed on our upward way. It is the intensified inheritance of the pure-bred which triumphs over the diversified inheritance of the scrub and thus enables us to grade up our stock. Similarly it is the diversified inheritance of the grade which precludes his success as a sire, even though he apparently possesses the characteristics of the pure-bred.

I have conceived, as illustrating the relative values of heredity, the personal equation and environment the simile of a telephone system. The wire strung between two poles may represent heredity. If it is struck by lightning it will conduct the undirected force as it always has conducted it and always will—no one knows whither. Environ this same wire with telephone apparatus at each end, direct the electricity in its proper volume and proportion and

the result is a marvel of achievement. The conclusion of the whole matter is that heredity of itself will do little for us if we do not direct and environ aright the results accruing from its limited force. The elements of success temporal or moral must proceed from within the man essaying to achieve it. The breeder who succeeds takes the forces and the elements he finds at his hand and directs them and surrounds them to the attainment of a fixed ideal which can be correctly formed only by careful thought lighted by the lamp of experience and reached only by a conquering course over obstacles great and small.

CHAPTER III.

THE STALLION—DESIRABLE POINTS AND FAULTS.

In selecting a stallion to breed from we must remember always that it is the handwork of man from which we have to choose. Therefore if we desire to pick out one which may reasonably be expected to transmit his conformation we must look for one which presents those characteristics which have been favored of all men ever since the work of improvement was begun. There is for this reason one quality which I count easily first in betokening promise of prepotence, and that is a good outlook—a high-headed, bold, noble masculine presence. All the ancient writers refer to the crest of the stallion. The Bible clothes his neck with thunder and makes him sniff the battle from afar. The oldest sculptures show him as a stallion should be in this regard. I never knew a stallion with the head and neck of a mare to be a good breeder. The bold outlook is possessed by the winning show horses. It is possessed by their sires. Men have bred for it, striven for it, even, as history teaches, fought for it during thousands of years. The horse that shows it is likely to have it by right of inheritance—a reason-

ably fixed characteristic. I mark it the most important of all when it is accompanied by soundness and desirable conformation in other points.

A lot of stock phrases have been trotted out from time immemorial to govern the selection of a horse. Some of them need puncturing. One of the most glibly quoted is "no foot, no horse." Experience of later day methods has suggested another axiom to me which should gain as wide a vogue—"no top, no price." A horse may be the soundest on earth and he will not bring a good price unless he has a good top to go with his soundness. Both top and bottom are required. Bear in mind this new proverb as well as the old one. No one should buy an unsound horse, but neither should he buy a sound one if he has nothing else to recommend him.

We have also heard much about hereditary unsoundness. I have never seen a foal unsound at birth, but I have seen hundreds ruined by faulty environment. What we must fight shy of primarily is formation so faulty as to predispose to unsoundness. A blemish which is the result of an accident pure and simple and arising on a normal joint, for instance, will not be transmitted. Narrow round hocks, from their insufficient carrying capacity, are predisposed to bone and bog spavins. Sickle hocks invite curbs. Short straight pasterns and cramped

hoof-heads go with sidebones, and so on through a list which need not be farther detailed here. Faulty surroundings in youth are the main cause for most of the unsoundnesses we see in horses.

It has been maintained that the stock term "quality" has never yet been properly defined. My definition of quality is "refinement of fibre." Letting that go for what it is worth, the fact remains that we recognize quality in a general way by refinement of conformation and texture of hair. Whether the hair dominates the quality or the quality unseen dominates the hair I am not prepared to say. Let us call the relation reciprocal. We have all heard a lot about the clean flat ivory-like bone of some horses and the meaty, coarse, spongy, round bone of others —beautiful quality in the former, no quality at all in the latter. To the first is joined a good foot, to the second a poor one, and there is a good reason for this, even if some of the terms and beliefs quoted have no foundation in fact.

There is no such thing as flat bone, as the term is used in the horse. The canon bones are round. It is the tendon that gives the flat appearance. The bone in the quality horse is not necessarily stronger than the bone in the other horse. The roundness of the leg is produced by the thickness of the skin and the presence of tissues about the tendon. The Colorado Experiment Station has found the bone of a common

ranger far stronger than that of a well bred, high-quality native horse.

Texture of the hoof is dominated absolutely by the character of the hair on the coronet. The hoof is secreted by papillae the same as the hair (also tubes), and in composition is a series of tubes glued together by matter very largely the same as the dandruff exfoliated by the skin. If the hair is coarse the papillae secreting the hoof will be coarse also, the structure of the hoof being therefore comparable to the hair we see on the legs and coronet. The larger the tubes in the hoof, the larger is the space between them to be filled with the connecting matter. The more coarse, brittle and curly the hair about the coronet, the more objectionable will be the formation of the horny hoof. The finest hair known in the entire equine family is on the leg of the Thoroughbred. At speed the foot of the racer sustains an impact with the ground that would instantly wreck the foot of a draft horse.

Quality, even if an intangible attribute, is ingrained in the horse, but it is not always recognized when it is seen. Many a rough looking seemingly qualityless colt in the field exhibits the most beautiful quality in the show ring. Much of it is often the result of proper environment. Quality is a word to conjure with and one, be it said, about which a measureless amount of buncombe has been preached. Too

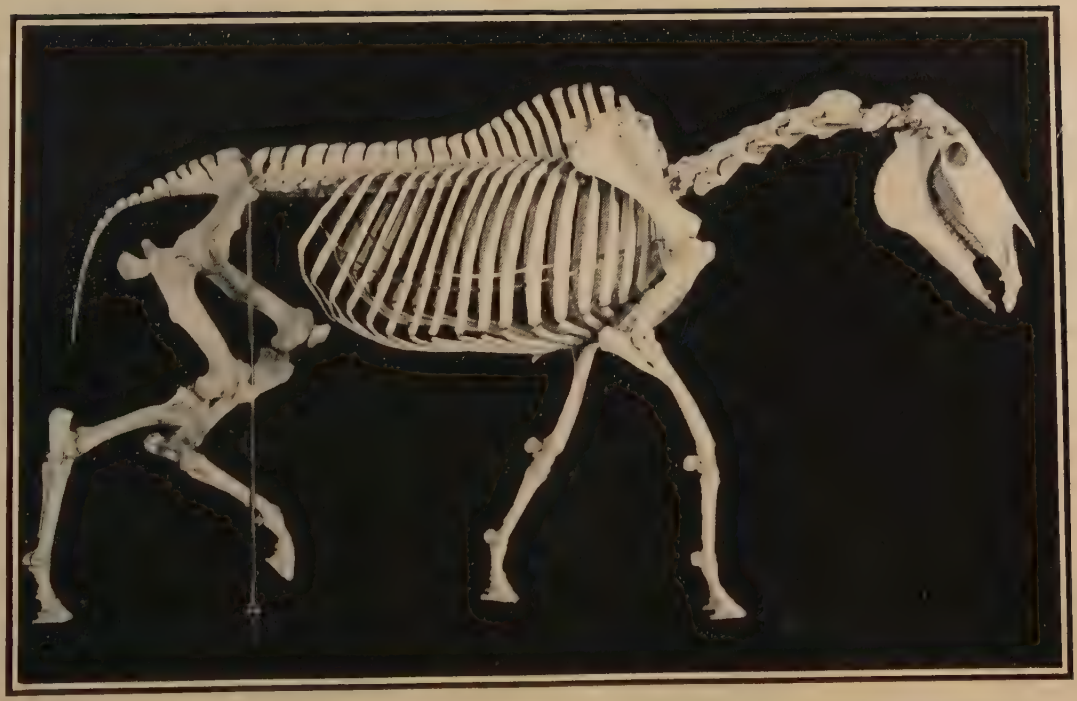
often it has been hidden behind to cover up a degree of ultra refinement which is far more to be shunned than a tendency as much in the other direction. Every undersized runty little fine-boned stallion is bragged up for his quality, as though that was some sort of an excuse for him. Now bear this in mind: if a horse has real quality he has it all over him, not merely in his legs. Quality counts for much in a horse that is big enough, but watch out that it is real quality and not weakness masquerading under that high-sounding title.

Another stock saying, which has been handed down for more than a generation here to the everlasting detriment of the horse, is that his foot should be deeply concave. It is only necessary to consult old papers and catalogues to learn how much stress has been laid on this erroneous teaching. The blacksmith has apparently taken advantage of this belief by invariably thinning the sole and cutting away the frog and so assisting in making the foot concave. Mark this fact well: the foot that is deeply concave—and naturally it is rare—is a thing to be avoided. The blacksmith should never be allowed to put his knife on sole or frog except to trim away ragged portions. What we want is a strong, deep heel, a thick frog, a deep, stout wall and as thick a sole as possible. If the sole is concave it must be thin, for there is only so much space in the foot anyway, and we need

as much thickness of sole as we can get. The low, weak heel and meager frog is that which we must avoid.

The horny hoof is joined to the inner structures at the coronary band and by the horny and sensitive laminae, some lining the horny hoof, some rising from the footskin. These two sets of laminae are interlaced together and they are again interlocked so that in the ordinary foot there are something like 750,000 points of connection between the laminae, holding the hoof in its place. The junction at the coronet is a weak one. The interlocking of the laminae practically holds the horny box in its place. The whole column of the leg rests on the comparatively small coffin bone in the center of the hoof. The coffin bone in turn rests upon the fatty frog which overlies the horny frog and the sole. The junction betwen the sole and the wall is not a strong one. This supplies the reason why the sole which is thick and never looks concave is to be preferred, because of the greater strength of its connection with the wall— hence the blacksmith should never be allowed to use anything but the rasp in leveling the foot to take the shoe. The bars are merely an extension of the wall, designed to keep the heels spread and should never be mutilated, in fact should never be touched with the knife.

"Begin at the ground" is another dictum which has been repeated parrotlike from year



SKELETON OF PULLING DRAFT HORSE

Photo from American Museum of Natural History

to year. Don't. Stand off rather and take a good look at the stallion. If he looks like what is wanted and has the right kind of an outlook to him, glance at his back and quarter, loin and flank. If he is short in his back, strong in his loin, full quartered, has plenty of space to take care of his dinner, and his rib is long and well sprung out from the backbone, then inspect his feet and legs.

Width in front and behind is essential, but the legs should not be stuck on one at each corner. A horse made that way always rolls in front and goes wide behind. The legs should be set well under the body and heavily muscled outside. This heavy muscling gives the proper sort of width. The quarters should be round, the tailhead well elevated, the lower thighs well filled, carrying the width of the upper quarters well down to the gaskins, into which it should round off nicely and then taper to the hock. The forearms should bulge prominently forward and outward and the muscle above and forward of the elbow should be heavy and the chest prominent and deep. The neck should spring well from a pair of sloping shoulders, curve abruptly to the crest and then still upward to the ears. The lower line of the neck should curve outward and then inward to the throttle which should be as fine as possible for beauty's sake. A horse is a poorly constructed animal at the best. Such an enormous weight as the head

borne on the end of such a long and weak bony structure as the neck is a poor piece of mechanical engineering, only partially corrected by the elastic ligament which stretches from the spines of the backbone at the withers to the poll. If the neck curves upward well and the bracing of the muscles on the underside is adequate it will be easier for the horse to keep his head where it should be. Short stubbed necks are never desirable.

The ear should be reasonably long, not coarse and never drooping. The head should be wide between the eyes, straight in its forward outline and of moderate length. The muzzle is hardly ever too fine in any breed and the jaws should be of depth proportionate to the other parts. The more prominent the eye the better. Over all the head should be lean and bony, and it should be joined to the column of the neck so that the horse may hold it away up and out with little effort.

The forelegs act merely as weight carriers. The hind legs do the propelling. The knee should be broad when viewed from in front and deep when viewed from the side. The canon and the tendon should be strong and the groove between them as much accentuated as possible. The pastern should be of good length and oblique, sloping neatly into a smooth open coronet which joins a corresponding foot without any roughness. The hocks should be broad from

front to back and of strong structure. The set of those joints should be such that a plumb-line dropped from the posterior angle of the hip should strike the hock and traverse the entire length of the tendon. This brings the weight to bear downward in a perpendicular line and gives the most strength. Quality of the legs has already been discussed, as has the texture and character of the hoof. Avoid horses that stand with their forelegs stretched out in front of them or tucked in below them.

Action must necessarily be different in the different sorts of horse and as such will be dealt with specifically in considering the various breeds. Generally speaking in all horses the step at the walk should be straight forward, each foot being picked up cleanly and showing the shoe at each stride. At the trot the movement should be bold and free, the legs carried well together, especially behind. Very wide action behind is a fault. Even in fast trotters where it has been condoned it is now deprecated as all the fastest are line trotters and do not throw the hind legs outside the front. A horse that stands "nigger-heeled" or with his front toes out, will usually strike his knees. The one that toes in will go clear. Paddling or throwing the fore feet outward toward the finish of the stroke is very objectionable as also is the outward or inward movement of the knee. The hocks should be kept close together, flexed

sharply and brought forward promptly well beneath the body. A wide-going duck-like motion is bad.

Soundness of wind must be insisted on always. Make a pass at a horse as though to punch him in the flank and if he grunts it is well to let some one else have him. When a horse can not keep that kind of a secret he will most likely tell his troubles loudly at the end of a smart run. Look well to his eyes, his teeth and his testicles—see that he has a full normal set of each.

In choosing broodmares the same general qualifications must govern with the exception that instead of the bold masterful masculine appearance of the stallion the mare should have a distinctly feminine turn to her, though her outlook should be lofty just the same. She can do with a bit more range than the horse, so long as she is strong-backed, deep in the flank, roomy all over and good in her bone.

In grading up native stock with pure-bred sires it is best to avoid extremes. If the mares are small do not mate them with a great big lubber of a stallion. Nature abhors extremes. Rather choose a medium sized compactly built stallion. He will give better results. If one has none but small runty mares to begin with it will pay to hasten slowly and lay the first-cross foundation securely in a uniform lot of fillies to which a larger horse may be bred and size grad-

ually worked to in that way. It is not often advisable to try to span the chasm between the 1,000-pound mare and the 2,000-pound stallion at one leap. As size is attained from 1,500 to 1,600 pounds and upward the ton stallion is all right, but with mares of 1,000 pounds or less a horse of not more than 1,650 pounds will do better work than a larger one. The same principle applies in all horse breeding—the more divergent the types of the parents the smaller are the chances of breeding good horses from them.

In choosing either stallions or broodmares, outside of actual unsoundnesses, avoid long couplings, light ribs, weak loins, light flanks, narrowness of conformation, calf-knees, sickle hocks, straight pasterns and small, steep, flat, shelly or low-heeled or mulelike feet. Very light bone also should be left for some one else, also crooked top lines, low backs, drooping rumps, ewe and short straight necks, sour or "fiddle" heads, sow ears, dish faces and small piggy eyes. Sidebones, ringbones, spavins and thoroughpins are most common unsoundnesses. Each is easily detected. A splint does not matter much in a young horse. The legs should be smooth and clean from the knees and hocks down to the coronet and so to the hoof which should be of fine texture without ridges, cracks or breaks. If in running your hand down the leg you find a bump, look to it closely.

In purchasing a stallion, as that transaction is usually carried through in this country, see to it that whatever promises or representations the seller makes are made before the bargain is struck and the consideration passes. Anything said after the consideration has passed is not binding on the vendor. If a guarantee of anything is to go with the horse get it in good set terms, the plainer and more definite the better. Always secure the pedigree certificate at the time of sale with a definite assurance that the horse bought is actually the one named in the certificate. "Mistakes" have been known to occur in this very particular. A guarantee of the kind holds the seller either to make the horse fit the certificate or the certificate fit the horse and leaves him in a bad place if he can do neither.

A guarantee that a horse will prove an average foal-getter has come with the lapse of time to be generally construed to mean that he will beget 50 per cent of foals to mares covered. If he does this the first season he will be doing well enough. A stallion guarantee is usually a jug-handled sort of an affair, compelling the buyer to breed the horse only to regular breeding mares, to keep a tally sheet showing proper return of mares, to return the horse in as good shape as when he was sold and to do yet other things all within a stated time. In return the guarantor agrees, in the event of the horse

not proving up to specifications, to replace him with a stallion of equal value, and he—the guarantor—sets the value. There is not a great chance for the buyer in such a deal, but somehow he manages to worry along from year to year. Most reputable firms prefer to treat their customers liberally and keep them satisfied on the ground, no doubt, that a pleased customer is the best advertisement, for no guarantor can be compelled at law to do much under that sort of a contract.

The seller should put in writing all he promises to do and sign his name to his promises. The law is peculiar in regard to commercial transactions "on inspection" and there is no special protection for the man who goes into a deal with his eyes open. He is supposed to watch out for himself. A guarantee of absolute soundness need never be expected. No sane man would give such an one. Legal complications must, however, always be unravelled by lawyers in the long run and therefore when a buyer goes afield to bring home a stallion he would better post himself at the fountain head freshly on the intricacies of the law. If he gets from the seller his bill of sale, a guarantee of average potency, the pedigree certificate and transfer and a definite statement that the horse bought is really the one named in the papers, he will be getting about all that is coming to him as the business is usually

done nowadays. If he is a competent judge he can afford to go ahead on his own responsibility. If he is not competent to make a good choice it will pay him to invoke the aid of the seller, who must know more about the animal than one who has only known him for a few hours. Deal only with reputable men. It is seldom that such men will throw a buyer down when their aid is claimed.

CHAPTER IV.

EMBRYOLOGY, IMPREGNATION, CONCEPTION.

Transmission of life has always been one of the greatest mysteries with which investigators have had to deal. As the higher mammalian animals are all the result of evolution spreading over millions of years, so the development of the life-transmitting agents must have been brought about through evolution from mere cellular fission of protoplasmic bodies up to the present complicated process. It was not until 1677, as is commonly accepted, that the seminal animalcules were discovered and it was not until well into the nineteenth century that much was known of their history and growth. Actual physiological transmission of life, transmission of physical and mental inheritance and the development of the fetus in the womb, with all the concomitant maze of mystery existing in reversion, accidental sports and the transmission of acquired characteristics, form one of the most intricate problems with which science has to deal. It is impossible to go into any extended discussion of this subject here. Therefor the merest outline must suffice.

In the mare the two ovaries are situated in

the lumbar region and connected with the womb by the Fallopian tubes. In the ovaries the ova or eggs undergo many well defined changes before maturity and are then liberated, usually one at a time, occasionally more. This is the germ-cell of the female.

In the testes of the male the sperm-cells or spermatozoa have their origin in the semniferous tubules. These life-giving agents undergo various changes from their inception to full development. At maturity viewed under the microscope they are threadlike bodies furnished with heads and not at all unlike the "wrigglers" one may see any summer day in a barrel of rainwater and which produce mosquitoes. These spermatozoa, having been matured, are stored in the seminal vesicles and during copulation are deposited in the vagina of the female. In some instances the number of these sperm-cells appears to be countless, in others not so great, but in all there is what as yet seems to be almost unaccountable superabundance of them. With them is secreted a flux or lubricating medium in which the spermatozoa float, but which in itself is not fertile.

Periods of heat are in the mare generally though not always coincident with the ripening and liberation of the egg. This passes into the Fallopian tube and through that to the womb. The spermatozoa have the power of motion and when deposited in the vagina by the horse begin

to work forward. They enter the womb, usually in large numbers, and some penetrate into the Fallopian tubes where, according to the best authorities, the first stage of impregnation takes place. The egg seems to have a strong attraction for the spermatozoa. Surrounding the egg is a soft envelope which is readily pierced by the comparatively hard head of the spermatozoon, probably by several. One alone, however, forces its way into the center of the egg, his tail is broken off and no more are allowed to enter. This forms what is termed the male pro-nucleus. In the egg at about the same time the female pro-nucleus is formed and those two moving together unite and complete the process of impregnation. In the egg there is a yolk which, after fertilization, is first developed to greater proportions than when impregnation took place, supplies sustenance for the embryo and later is absorbed. When it is considered that there are no two things in animal life exactly alike, and when it is known that only one of hundreds, perhaps thousands, of spermatozoa actually fertilizes the egg, it is easily recognized how vast and uncertain the problem of heredity really is.

Development of the fetus in the womb of the mare has been more or less accurately worked out. Description of the changes noted, however, belongs to the domain of the veterinarian rather than of the breeder. It is pertinent to

observe, nevertheless, that there is no actual blood transmission directly from the dam to the fetus—there is no direct communication between the maternal and fetal circulations. Instead the blood vessels of the placental membranes (which we recognize as the afterbirth after foaling) lie contiguous to the blood vessels of the dam and sustenance is afforded to the fetus by diffusion. Besides this there is in the amnion or water bag a large supply of fluid which is freely imbibed and absorbed by the foal. It is thus easy to see how a very slight disturbance of the juxta-position of the blood vessels of the dam and membranes, or of the organs secreting the water in the amnion, may cause nourishment to be shut off and a weak or dead foal be produced. The merest disarrangement of the contiguity of the blood vessels may work harm to the young and in this way many a weakly ill-nourished anemic foal may be accounted for when the owner could see no reason why it should not have come all right.

In order for a mare to conceive it is necessary for the sperm-cells to enter the cavity of the womb and the Fallopian tubes. As they are microscopic in size they are necessarily very delicate in structure. It is plain that if the neck of the womb is absolutely closed they can not enter. After impregnation has taken place and the fertilized egg has descended into the

womb, the mouth of the womb is closed by a plug of mucus. If from laceration or other accidental cause the mouth is unduly distended it will not be closed and the egg will pass out into the vagina and be lost. Mares suffering from any affection of the genital organs, such as leucorrhea (whites), which sets up a discharge from the mucous surfaces, will rarely conceive. These discharges are acid and destroy the spermatozoa. Similarly any condition such as a heavy cold, strangles or the like, which induces high temperature or fever, will operate to kill the sperm-cells. These, with the germ of contagious abortion, are the commonest causes of barrenness in mares.

Any man reasonably intelligent can quickly obtain a working knowledge of the genital organs of the mare. Outwardly visible is the vulva. This is the entrance to the vagina which is a more or less cylindrical canal into which the human hand may readily be passed with the fingers placed so as to form a cone. A short distance within the vagina will be found a shallow depression on its floor and beyond this a protuberance coming from beneath. On no occasion or pretext should this be touched. It is the meatus urinarius—the orifice through which the urine is voided from the bladder. It is fitted with a valve and is a tender and delicate structure. Mares have been killed by ignorant operators mistaking it for the neck of

the womb and manipulating it. Leave it alone. Pushing the hand still gently inward and past the meatus the hard tough neck of the womb will be encountered—a stick-like dependent body about two inches in diameter and circular. This will be found with a hole in it in most cases. If it is closed a little exploration with the finger will discover a transverse indentation in it. Gentle pressure of the finger will effect an entrance and when one finger has been inserted the orifice may be rimmed out to permit the ingress of two fingers, when it is large enough. If it is necessary thus to open the neck of the womb it should always be done a short time before service, because it will quickly resume its contracted condition. It should be needless to say that when such explorations are made the nails should be carefully trimmed, the arm and hand plentifully smeared with vaseline. A hand on which there is any abrasion, even a bad agnail, should never be employed in such work. The benefit of "opening" a mare is not, as is generally supposed, so much in providing free entrance for the spermatozoa, but in removing toughened coagulated acid mucous secretions collected in the mouth and neck of the womb.

Impregnation of mares artificially, as it has been termed, by syringe or capsule, is admittedly a successful operation. As the spermatozoa must first get within the womb before they can

reach the egg, it is of obvious advantage positively to place them there. The operation consists merely in taking up the spermatic fluid in the syringe (so-called impregnator) or capsule and depositing it within the uterine cavity. Once there the spermatozoa may safely be trusted to meet the egg. Mares can easily be got with foal yet never see the horse. Two or three mares may be impregnated from the same service, as the amount of spermatic fluid ejaculated by the horse is abundant.

In order that the operation may be deftly performed, it is necessary that the womb should be open. If on examination it is found to be closed, open it as described. After copulation the withdrawal of the horse will bring much of the spermatic fluid back into the depression in the floor of the vagina to which reference has already been made. If the nozzle of the syringe is inserted in the vagina at this point a sufficient amount of the fluid may be drawn up into it. If it is desired to operate on the mare that has just been served, conduct the nozzle of the syringe with the hand into the neck of the womb, press the bulb, ejecting its contents into the womb, and the job is done. If it is desired to impregnate a second or a third mare from the one service of the horse, have her held handy by a sensible attendant. Blunderers are little use for this purpose. When service has been accomplished to the first mare by the horse

have him taken away. Then taking up the fluid with the syringe quickly, deftly insert the nozzle in the vagina of the second mare, pass it forward into the womb and press the bulb as before. The syringe used for this work is fitted with a rubber tube about 20 inches long between the nozzle and bulb. Care must be taken to sterilize the apparatus thoroughly between operations by cleansing in hot water.

With the capsule, which is made of gelatine and readily dissolves on contact with the warm moist tissues, the operation is quite as simple, if not more so. Remove the cap from the capsule and taking the other part in the hand, insert it in the vagina, scooping up the fluid into it with the fore finger. When the capsule feels full push it on up into the womb and leave it there. When a second mare is to be impregnated, fill the capsule as before, withdraw the hand holding the capsule, insert it in the vagina and push it into the womb as before. There is no occasion to be in any great rush. Be deft and make every move count. Any reasonably dexterous man may become proficient at either operation with a little practice. The main thing is to keep the fertilizing fluid from any marked rise or fall in temperature, and to keep it from the light. The syringe shuts out the light; the fingers closed about the capsule perform the same service, when a second mare is impregnated.

Any man who stands stallions may measurably increase his returns from foals by using this process of impregnation. The service of a much favored stallion may be greatly extended by it. Some mares make a great fuss when they are to be bred and others are atrociously mean when in heat. All such may easily be dealt with by keeping the horse out of their sight and operating quietly upon them. I have carried a filled capsule forty feet and successfully impregnated a female burro from a service performed by a Shetland Pony stallion to a mare of his own kind. The little stallion refused the burro altogether and she in turn could not be coaxed to go near him. The capsule and a little ingenuity overcame the difficulty and she foaled a fine healthy hinny.

Whenever the operation is to be performed the mare should either be hoppled or her fore foot should be held up by an assistant. The hair of the tail should be braided or sacked down the length of the dock so that it does not interfere with the operation, and an assistant should stand ready to pull it out of the way if necessary. I have made a study of this matter of impregnation and the more I see and learn of it the more deeply impressed I am with the great possibilities, financial and otherwise, inherent in it. I was the first to exploit the capsule method of impregnating mares—I invented that method—and have had an extended ex-

perience with it. I commend it to the attention of all breeders and men who stand stallions and jacks. I count the syringe as good as the capsule in every respect save the danger of possible infection of clean mares from those that are diseased unless the syringe is kept in a thoroughly sterilized condition. The operation itself is an old one, but as at first it was confined exclusively to the human subject it is not strange that it did not gain wide publicity until a comparatively recent date. So far as I know the mare is the only one of our domestic farm animals on which the operation of so-called artificial impregnation has been performed.

There are many fool notions concerned with the mating of stallion and mare. For instance some people think that the stallion "is to blame" if a mare has twins. The mare alone is responsible for the number of foals she produces. If two eggs are matured about the same time and the mare is covered, the chances are that both will be fertilized. There are more spermatozoa ejaculated at one service of the horse that there ever will be eggs matured by a mare in her whole lifetime. The stallion can have nothing to do with the number of foals a mare may produce at a birth, except that he fertilizes as many eggs as her ovaries ripen. A mare is not more likely to have twins to a horse than she is to a jack, though some folks think she is.

Then again it has been believed by some, marvelous though it may appear, that the spermatic fluid of the horse could be transported long distances under almost any conditions and still retain its life-transmitting properties. In fact a shameless charlatan once went so far as to advertise a container in which the fluid might be sent through the mails, thus taking advantage of a ridiculous credulity born of ignorance. Just how long the spermatozoa will live under the most favoring conditions is not yet determined, but it is no great length of time.

Another idea which popularly prevails is that startling impressions received by a mare at the time of service may have an effect on the color and even conformation of the progeny. Not so long ago a man asked me how he might paint out the blaze face of his horse so that the mares might not see the white mark, and so have no "badly marked foals." On various occasions I have seen men swiftly wheel their mares around after service so that they might gaze upon the stallion's bald face and so insure foals similarly marked. Color at least may be removed from the list of those things which accrue from impressions received at the time of service; and it should not be forgotten, moreover, that impregnation can not take place at the moment of copulation.

Then there is the everlasting "double cover." It will not down. Many men insist that the

mare has a better chance to get with foal if she is bred twice within half an hour or thereabouts. The fallacy of this contention is explained fully by the great number of sperm-cells given up by the horse. As there is a vast surplus of them in each service there is assuredly no sense in duplicating their number. In any case it is a serious tax to make a horse cover twice in thirty minutes and it is a money losing proposition as well. One service at a heat is enough.

Another notion long in vogue is that the first impregnation influences subsequent offspring irrespective of parentage. Thus it has been alleged that if a young mare should be bred to a jack and produce a mule, all her later foals by stallions would have mule marks. Prof. Cossar Ewart's experiments with the Burchell zebra—the most brilliantly colored of the equine race—and pony mares apparently prove that there is no basis in fact for this theory of telegony, as it is called, and that the first impregnation has nothing to do with those which follow later.

Close inbreeding is a practice to be shunned in a general way. It is not to be denied that some famous breeders have extensively inbred their stock and so found a plain path to the production of a few outstanding animals, but in inbreeding as a rule there is concealed a bottomless abyss of failure. The rare instances where incestuous mating has been practiced and suc-

cess followed are the exceptions which but prove the rule. Just what degree of relationship may be permitted can not be set down by any rule, but it may be accepted as accurate that consanguinity at all close should be barred.

CHAPTER V.

MANAGEMENT OF THE STALLION.

Having seen that there is nothing supernatural or occult about the transmission of life, but instead that the development of the germ-cell and the sperm-cell is a normal physiogolical process, it becomes plain that in order to produce young of normal vigor the parents should be in normally vigorous health. Possession of the highest condition of health implies the continual breaking down of the bodily tissues, elimination of the waste and replacement by new tissues, prevention of undue accumulation of fat and thorough cleansing of the system by the eliminatory channels. This desired condition inheres in the proper degree only in the horse when he is worked and well fed. It follows that every stallion should be worked, and the same is true of every brood mare. I can see no reason why both should not take their turns regularly in the harness and do their reproductive work as well.

There comes a time, of course, in the life of every stallion and mare when, on account of failing bodily vigor, only moderate labor, or none at all, should be required of them. In the sere and yellow stage of equine existence the system's physiological processes are much

slower than in youth or at maturity. The ideal condition is achieved when just enough work is given to keep all the bodily functions at their best. I count a full day's work none too much for a stallion from his fifth at least to his twelfth year and often much longer.

With the extension of my experience I have become more and more firmly rooted in the belief that the working of the stallion and the mare, in the draft breeds especially, is an absolute essential to a high degree of success in breeding. It follows then that the working of the parents has had its influence on breeds. If this is true the manner of working and the temperament of the people ordering the labor must also have exerted their influence on breeds—which brings us back once more to the personal equation and environment.

It seems clear that this accounts in large degree for the prevailing popularity of the Percheron in the United States and explains why its offspring finds such favor with the American people. There are no great studs of idle mares in France. It is hard to buy mares there in show condition. It is common enough to see mature draft stallions imported from France with the collar marks upon them. I do not recall ever having seen similar marks on a stallion imported from the United Kingdom. The French horse is driven by men of quick nervous temperament, flashy and mercurial at times,

perhaps, but in the main steadfast, enduring and the most thrifty in the list of nations. These are the people—the French small farmers—by whom the French stallions are bred from working stock and of the French horses of draft blood the Percheron must be taken as the typical example.

The greatness of the British draft breeds is everywhere conceded, but it is doubtful if the maintenance of great studs in plethoric idleness has added anything to the sum total of their excellence.

Put the stallion to work. Break him like any other horse, preferably as a two-year-old, and make him do light, but not real, work at that age. At three make him do what other colts of his age are required to do. If an unbroken stallion of workable age is purchased, let the breaking be the first thing undertaken with him. It will not generally prove a hard job, for a stallion is seldom afraid. Gradually toughen him into doing his full day's work as one of a team. It is preferable to hitch an entire horse with a mare, but if it comes handier to work him with a gelding there is no reason why he should not be matched in that way. There is a popular impression that a gelding worked with a stallion will not thrive. There is no truth in any such assumption. As a rule a stallion is more bullheaded than a gelding or mare. Always make him behave. It was a great engineer who in-

vented the whip. If the horse is inclined to nip at and bother his mate, tie a staff of the proper length according to the job on hand from the inner ring of his bit to the shank-ring of a halter on the head of the other horse in the pair, or to the upper ring on the hames. Use good stout harness and never forget that there is a stallion in the team. Do not let him yell and squeal and generally make a nuisance of himself. Make him behave like a gentleman.

In addition to the good health and vigor which accrue to the stallion kept in regular work in the harness there are other blessings which he wins through having to earn his daily bread. One, and I count it among the most important, is the companionship of man, and another is a good place to sleep and eat. Thrice blessed is the stallion which works every day, lives in cleanliness and comfort among the other horses, sees human beings and often hears the human voice. Thrice cursed is the poor beast which is banished to some out of the way corner of the farmstead, closed up in some dirty old stall, banked deep, perhaps, with manure, forced to seek the light of day and the fresh air in a yard which, never cleansed, is in damp weather a compound essence of filth and other abominations, and fed more or less occasionally when some one happens to remember about him. Freely worked, the legs of a stallion will seldom go wrong. Condemned to solitary confinement in

a germ-infected tenement his legs seldom stay right. Worked freely, intelligently fed, properly groomed and stabled, a stallion will remain a normal sort of beast. A solitary prisoner, he generally contracts the habits of masturbating, crib-biting or lip-slapping, or his temper may go altogether. And who shall say with truth that the poor brute has been to blame?

Exercise and plenty of it the stallion must have. The rational way is to work him. That is far better than walking him along the road. Still, some exercise is better than stagnation on the principle that a small bone is better than none to a hungry dog—but some is never enough. It is an abominable chore to walk a stallion along the road for eight miles or so. Few grooms can resist the temptation to soldier at such a job. It is better to drive a horse than to lead him, but if he is broken to harness at all he might as well work and so earn his keep.

Finishing up this matter of exercising stallions I believe that every stallion should have some good sharp work every week-day of his life. Drafters should be sharpened up at the trot. Make them step along occasionally as though they amounted to something. Just because a horse is entire is no reason why he should be allowed to loaf. The gait of the drafter is the walk with a heavy load behind

him, to be sure, but he should be able to get out and trot on occasion and not fall all over himself. If a coach stallion is to be trusted to beget coach or carriage horses of good to high class he should be able to do just what is expected of his get. If he can not step along the road at a fair clip and keep it up for a reasonable distance, get one that can. It is hard enough to find stallions that will transmit strongly and regularly the good qualities which they possess themselves; it is nothing short of folly to expect them to transmit those which they have not.

If a stallion is worked the feeding problem solves itself. He will get his regular rations every day, and while I prefer oats and bran it does not so much matter what a working stallion gets to eat so long as he gets enough and the quality is good. There is no wonderful secret formula for feeding stallions in or out of the season. Oats and bran, about one-fifth bran by weight, form the best ration. With the working stallion the ration should always be the same. Corn is good feed also for a stallion that is worked, providing it is not changed.

Time was when I believed that for stallions during the season it was an excellent plan to give a mash of boiled barley every Wednesday and Saturday night, but I have changed my notions. Time also was when I advocated the use of cut or chopped hay in feeding stallions. Ex-

periments have, however, shown that the addition of this material to a horse's grain ration makes no appreciable difference in the manner in which the grain is digested. If a stallion is a very hoggish feeder it may pay to mix hay cut or chopped in half or three-quarter-inch lengths with his grain, for the reason that the sharp ends will keep him from bolting his food, but when the ration is fed as a mash the cut hay soon gets soft and is bolted with the rest of the food.

Most stallions get too much hay; in fact, that is true of most farm horses. A good rule to follow as a basis for finding out how much grain and hay to feed is to allow one pound of each to every hundredweght the horse weighs. Some will need more, some less. With this as a basis of experiment the ordinarily observant man will soon be able to tell, by noticing condition closely, how much the horse needs. In all cases feed enough—just so he comes good and hungry to the next meal, and feed three times a day. This basis will hold good for feeding all horses on the farm. Feed most of the hay at night. For instance, if 17 or 18 pounds of hay are to be fed per day, feed five or six in the morning, none at noon and the remainder at night. If it is not all cleaned up feed less. I also believed once that grass during the season was good for a stallion. I do not think so now, especially if the horse is worked.

Unfortunately for the horse breeding business, in most rural districts stallions are not worked. After the season, perhaps from the middle to the end of July, the horse is too often banished from active participation in the life of the farm. He is seldom groomed, his stall is cleaned out perhaps on rainy days, and such exercise as he gets he must needs take in a small lot which in a rainy time becomes a manurial quagmire. His rations are cut down almost to the vanishing point, all except the hay, and of that he gets about all he will eat—much to his detriment. As cold weather comes along the horse gets less and less care, the dandruff in his coat accumulates, and if he is of a hairy-legged sort his shanks get into bad shape. Along about the end of February his owner, with the avowed intention of getting the horse ready to make a season, begins to tear out the thick dirty coat and pour feed into the horse. A more or less spasmodic attempt is made at exercising the poor beast, and when the first mares come along he is expected to be in proper fix to get them with foal. A worse method of treating a stallion could hardly be devised.

If anyone can not see that it is to his interest to work his stallion and persists in keeping an idle horse about his premises to be nothing but an expense for two-thirds of the year, then let him stable the horse properly, feed him grain sufficient to keep him in round flesh at all times,

groom him at least once a day, and give him not less than eight miles on the road, rain or shine, every week-day. The feeding should be done the same as when the horse is worked, but, of course, so much grain will not be necessary. This idea of deliberately letting a horse get down skin-poor, so that he may be "built up again," is all bosh. Better keep him in good shape, round and pleasant to look at, though not loaded with tallow, at all times. When you find a stallion let down thin in cold weather you will generally hear his owner making excuses for the lack of flesh and the dirty coat. It is a cardinal principal in business never to make an excuse or to get into a place where one has to be made. The man who keeps his stallion in poverty all winter may have won out at it, but if he has it is in spite of, not because of, his practices.

When it comes to beginning the season with a stallion that has been worked it is a very simple matter to hitch him up and start him on his rounds, if he is to travel. In good hard flesh he can make a long distance each day and feel all the better for it. A stallion that has been worked all winter should have no trouble in making as much as twelve miles a day or even more if it is necessary. With a stallion not accustomed to the harness, eight will be enough. If the stopping places to be made do not neces-

sitate this amount of traveling the horse should be exercised in the morning.

Before starting his season the stallion should be properly advertised. No advertisement is as good as the horse himself stepping proudly down the village street hooked up with a fine mare. His docility, good manners and attractive appearance in the harness can not fail to compel favorable attention. Moreover when he is worked and driven frequently to town owners of mares get to know him well and, seeing him often, are necessarily more impressed with him than they are by other horses which are kept cooped up at home from one season's end to the next. Then the owner has always the chance to work up sentiment favorable to his stallion, and there is no owner of mares who would not rather breed them to a horse likely to be sure than to one just as good but not so much so. In addition space in the local newspapers should be bought and used to exploit the merits of the horse, his breeding, his fees and terms, and a detail of the route he is to travel or the place at which he is to stand. Well displayed posters help—a little. There have been so many half-truths and untruths told by this route that men have come to regard a stallion poster as rather apocryphal to say the least, but they will help some, especially if the detail of the route to be traveled is clearly stated (and then adhered to strictly), and the

posters are securely nailed up in public places.

Most of the states now have laws granting the stallion owner a lien on the get or dam and get for the service fee. This lien is usually operative only when certain formalities specified in the law are complied with. These laws brought down to date will be found for those of the several states and territories which have them in the appendix to this volume. If the law requires that the horse be registered with any state or municipal official, the owner should so register him before the season begins. When the season is closed the list of mares covered, when required, should always be filed. This places the owner in a position where he can force any delinquent to pay. Those whom he desires to favor may be favored just as though no list has been filed. This filing of the list of mares covered places no obligation on the owner of the horse, but it enables him to force payment if he desires to do so and protects him efficiently. In every instance the owner should post himself as to the requirements of the law and then comply with them to the letter. This is only a matter of self-protection of which every stallion owner should avail himself and implies no distrust of his patrons.

In all advertisements state plainly the terms on which the horse is to stand. In addition have cards printed containing on one side three contracts (fees to suit) worded like this:

PERCHERON STALLION ROBERT.

Registered No.....in Stud Book of Percheron Society of America.

(Insert pedigree if desired.)

Will stand by the season, from April 1 to July 1, at $10. Fee due at end of season. In case mare fails to get in foal during the season she may be returned free for the following season or another mare substituted for her next season.

I accept the season contract.

Signature.....

(Of owner of mare bred.)

Will stand by insurance. $20 to insure a mare with foal. Fee payable when mare is known to be in foal. I agree to return mare regularly for trial, and if I fail to return her as agreed I promise to pay the season fee of $10.

I accept the insurance contract.

Signature.....

(Of owner of mare bred.)

Will stand by the leap or single service, at $5. Fee payable at time of service.

It should be understood that this is merely a sample form to be used for stallions of any breed.

On the other side print words to this effect:

.....

(Post office) (State) (Date)

Bred this day for....., ..., ...

(Mare owner's name.) (Address)

One.....mare, markings as follows: .....

(Color) (Note marks plainly.)

Name .....

Terms of service..... Fee $.....

(Insert terms here.)

On insurance contract mare is to be returned for trial

.....

(Insert dates specifically as agreed.)

.....

(Signature of owner or groom.)

.....

(Signature of owner of mare.)

Whenever a mare is brought to be bred hand the owner of her one of these cards, and when he has decided under which contract he desires to breed her make him sign his name to that particular agreement. Then fill in the other side of the card. Always be sure to get the dates down and that they agree on both sides of the card. When the owner of a mare signs such a contract he is held for the payment undertaken. A man who will not sign such a document is usually a good one to let take his mare to some other horse. To protect himself in an insurance contract a stallion owner should make it plain that the return of the mare is the business of her owner. Most breeding on farms is done by insurance. The courts have held that if a man breeds his mare by insurance he is not bound to return her if she fails to settle at the first leap or at any other leap. In a plain insurance contract the stallion owner takes his chances of the mare being got with foal the first leap and he gets a higher price for it if she does. If the mare does not settle there is no duty imposed on the mare owner to pay anything or to bring her back. If on the other hand it is plainly stated in the contract that mares bred to insure and not regularly returned must be paid for at season's rates, they will come back until they do settle or the season ends, or their owners must pay.

Stallion fees are too low in farming regions

as a general thing. This applies only to pure-bred stallions. Grades are dear at any price. A common fee is $15 to insure, and let us say the stallion owner actually gets paid for foals from half the mares covered. For the ease of computation let us put the number of foals paid for at 50 in the case of a mature horse. At $15 each this amounts in all to $750. It will cost around $200 a year to pay a good groom during the season and feed the horse. Then there is also the interest in the money invested to be considered and the risk—whatever that may amount to. Suppose the horse cost $1,500, the interest at 5 per cent would be $75. At 8 per cent on $1,000 for insurance against death, and counting nothing for depreciation, the total expenses would be $355. But the stallion will decrease in value from year to year, so suppose we write off another $100. This makes a total expense of $455 to be charged against a gross income of $750. The margin is not large. Insurance may not actually be carried and the money may not be paid out, but the owner is entitled to compensation if he carries the risk himself, just as he is entitled to credit for the grain the horse eats and which otherwise might have been converted into cash. With a net income of around $300 it takes a $1,500 horse five years to pay for himself. Some horses will do better and some worse. Taking the average, the figures will not be found far out

of the way in either direction. An extra $5 per foal paid for practically doubles the profit. It is plain that with a $15 fee the limit, no man can afford to buy a very good stallion, for such cannot be bought, as values now range at least, for $1,500 or less. The stallion fee business is one in which it will pay the mare owners well to let the other fellow make a dollar once in a while.

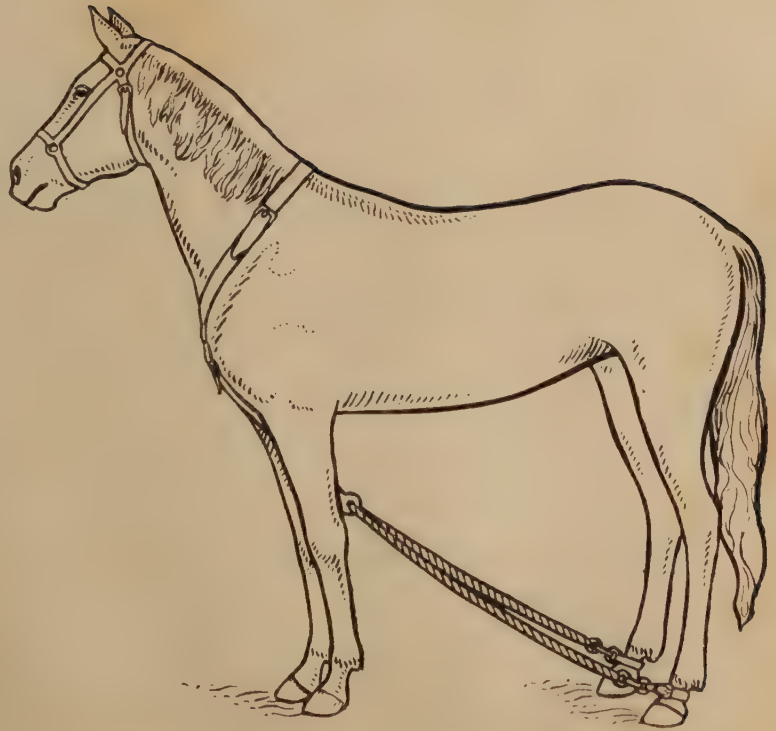
There is something wrong with this stallion fee business anyway, and there always has been. The service fee has from time immemorial been about the last thing the average farmer has thought of paying. It seems to be a prevailing impression that the fee is "easy money," and therefore the bill for it deserving of scant consideration. Then in their far too fierce competition stallion men have let their bills run and run along till most of them have lost a lot of money through their good nature. In fact, it is the exception to find a stallion owner conduct his business on business principles. Insuring the foal to stand and suck, as a business proposition, is something no other variety of commerce would tolerate. In so doing the stallion owner insures not only the proper treatment of the mare and against the incidents and accidents of parturition, but also against battle, murder, sudden death, violence and pestilence as well as the slight pathological disarrangement of the fetal membranes through which, as already

explained, nourishment is conveyed from dam to foal. If owners of mares can coax or force a stallion owner to carry such insurance for them well and good. That is their business, but the stallion owner is foolish to be intimidated or cajoled in any such way.

A good leader is essential to the best success of any stallion. The man who will best succeed as the caretaker of a stallion must be a fairly shrewd judge of human nature, a bit of a politician and a good mixer as well as thoroughly versed in his business. With a valuable horse it always pays to hire a good man. Englishmen and Scotchmen, by reason of their special training in the old country or by old country parents here, have so far enjoyed the reputation of being the best stallion leaders we have. they are usually the most careful of their charges. They have been brought up to the business and know its ins and outs. A groom that cannot be trusted to be always on the spot is little better than no groom at all. Get a good man anyway, no matter what his nationality, and then keep him, though that is not always easy. My experience has been that good leaders are generally men of peculiar tempera ment.

Every man who makes a business of standing stallions should have a properly constructed breeding plant. This need not be expensive. It should consist of good solid footing on which

to breed mares, and for this reason a shed is preferable to an open yard. Let the yard or shed be concealed from view as much as possible, and always at some distance from the dwelling house—for obvious reasons. At a convenient spot erect the teazing pole to form a sort of stall in which to try the mares. I like it best with the wall of the shed or tight-board fence of the yard forming the off side of it. For the pole part of it set two stout posts deeply in the ground parallel to the wall and distant from it about the width of an ordinary standing stall in a stable. Set these posts about eight feet apart and to them, three feet and eight inches from the ground, bolt a smooth six-inch pole of some tough wood—hickory of course preferred. Take the bark off it and round off all corners and edges. At the front end of the stall so formed build a stout little pen. Into this the foal of a nursing mare may be bundled with little trouble and with it in front of her the mare will stand quiet enough without fretting as she surely will if it is out of her sight. When the mare is in place, lead the horse from his box, make him come up quietly at right angles to her and do not let him rear and tear all over the place in his efforts to get at her. There is no sense in letting a horse nip and fuss and fool with a mare for half an hour. Sometimes it may be necessary



BREEDING HOPPLES

to exercise so much patience, but as a rule it is not.

Breeding hopples have prevented many an accident. It is always safer to use them, no matter how gentle a mare may be, and it only takes a moment of time to adjust them. The illustration gives a good idea of them and their use. Be sure that they are tight enough. Never let the stallion get within range of an ill-tempered mare's heels. He can usually take care of himself when approaching her or mounting. If he can get his weight on her back she can not hump herself to kick. Most of the accidents resulting in injuries to stallions by vicious mares happen when the horse is dismounting and more or less in an exhausted condition, not looking out for attack. Once a man gets a horse kicked he will think a whole lot of the hopples he might have used. This is one of these common cases in which an ounce of prevention is worth an ocean of regret. In all cases when going to his mare make the horse get to her from the side, not from behind.

All sorts of stallion bridles are in use. Only comparatively few horses need very severe handling. An ordinary bridle made strong enough and fitted with a straight bar bit and a lead rein with a chain at one end is usually strong enough to control the horse. Snap the chain into the off bit-ring and pass the other end through the near ring, thus bringing the chain below the

jaw. If a smooth, close-linked supple chain is used any good handler can make his horse attend to business. The most severe apparatus consists of a bar of iron about ⅜-inch in thickness and 8 inches long fitted with rings on both ends, the one welded into the off-bit ring and the other passed below the jaw through the ring on the near side. To the ring on the near end of the bar a strap is attached. The bit used with the bar is a plain snaffle, and naturally the leverage obtained is tremendous, but its use is seldom necessary. Never pass the lead rein up over the head. That is an indefensible practice in handling stallions. By passing the line over the head most of the leverage is destroyed and gives little more purchase than if the rein is snapped into the near ring of the bit only. Most of the purchase, such as it is, comes on the top of the head, and you can not do much trying to control a stallion by his poll. Best of all is to break the horse to behave himself so that he may be led out to his work with an ordinary cotton-rope halter.

In the matter of allowing a two-year-old stallion to cover mares, experience teaches that from eight to ten will not interfere with his development in any way if he is full-fed. Colts of this age are usually sure. Only those which are well developed and vigorous should be permitted to serve. The two-year-old colt may be allowed to cover about one mare every five

days. For a three-year-old the limit should be from 25 to 30. A horse will average about three covers for every foal he begets, if he is reasonably sure, taking mares as they run through most country districts. If a three-year-old gets half his mare in foal, or 15, he will make about 45 covers or about three to the week for the 15 weeks of the season. This makes about one every two days, not counting Sunday. For a four-year-old from 40 to 50 mares are enough. He may make a slightly longer season, or about 115 days, and if he gets 25 foals he should make 75 covers. This is about three every two days. A mature horse should be limited mostly to two covers daily, perhaps three at a pinch, but never more, and then seldom. It is better to be conservative in this business of breeding mares. Remember that it is the number of foals begotten that in the end pay the bill, not the number of mares covered.

Watch out sharply and never breed a mare that shows any sort of abnormal discharge from the vagina. If she has such a discharge she will not get with foal anyway, and she may give the stallion some virulent disease. If by carelessness or unavoidable occurrence the horse has been allowed to serve a mare with an abnormal discharge the entire penis should immediately be washed with a 1-100 solution of a good coaltar dip and the sheath should be freely syringed to head off possible infection.

Never put lard or vaseline or other greasy substances in the sheath. If a mare has a heavy cold or is feverish let her go over to another heat. She will rarely get with foal when in such a condition, so the service will most likely be wasted.

Many stallions fall into the habit of masturbation. Prevention is far better than cure, and the best preventive is work and the constant companionship of man. Horses are unlike bulls, rams and boars; it is hard to catch them at it. If a horse is under suspicion but can not be detected, clean every particle of bedding out of his stall and stay with him for eight or ten hours. Then close him up and leave him by himself for a little while. If he is abusing himself the evidences will shortly be visible on the clean floor of the stall. Once the habit is contracted it is practically impossible to put a stop to it. It is common among race horses and all other horses that are idle and alone most of the time. Many different kinds of shields to prevent the extrusion of the penis are on the market, but I have little faith in any of them. Some men have reported success gained by slipping an ivory ring over the gland at the end of the penis, just tight enough to prevent erection, but not tight enough to shut off circulation. Others have reported failure and a few disaster. I do not like it. If it is desired to try the ring on a horse which has

contracted this habit, get an ivory ring and have it fitted by a veterinarian. Hard rubber rings have been used for this purpose. Avoid them. On no account be so foolish as to hang a currycomb or a corn-brush or some other lacerating instrument just in front of the sheath with the object of hurting the penis when an effort is made to extrude it. It is a bad business all around, and the best thing is to prevent it by working the horse regularly and letting him share in the life of the farm.

A few don'ts are now in order. Don't let a stallion roar like a pirate whenever the door of his box is opened. Don't let him rear and sprawl all over the lot after he is led out. Don't let him plunge forward when going to cover. Make him come easy at it. Don't dope him with drugs to make him more anxious. Don't take every old mare that comes along. Don't let the horse cover on Sunday to oblige anybody. Don't run down your neighbor's stallion. Don't act like the traditional "stud hoss man." Don't take any stock in the hoary old fictions that so generally prevail. Don't cut prices. Don't make a rich man a present of $20 or $25 because he has four or five mares to breed. Don't knock; be a booster.

CHAPTER VI.

MANAGEMENT OF BROOD MARES AND FOALS.

As it is with the breeding stallion so it is with the brood mare; it is best to work her whenever possible. A mare that is worked intelligently, not pulled hard, properly fed and well housed will usually carry her foal to the appointed time and bear it with little trouble. If the pregnant mare is worked the feeding problem solves itself once more—any good food, free from dust and mold, will serve her purpose well if she is given enough of it. Special care should always be exercised to see that hay and grain fed to pregnant mares are absolutely free from dust or mold or other evidences of decay. Abortion is a likely consequence of feeding moldy hay or grain. Changes of food are not advisable and are to be avoided.

It is, however, impossible to work brood mares where a large number are kept. Plenty of exercise is an essential to good health in all horses and this is best given idle mares in winter by allowing them the run of a large field. Perhaps the best exercising ground for brood mares in all parts of the country is a large pasture on which a goodly portion of the herbage has been allowed to mature. Anywhere in the cornbelt blue grass grows luxuriantly, and if it

is not grazed closely after the autumn rains come, but allowed to grow rank and thick, it will cure on the ground and prove a great attraction in cold weather, even if the snowfall is rather heavy. Mares will do a lot of hustling to get such herbage in winter. An ideal pasture for this purpose has trees enough on it to form some shelter.

Brood mares should be kept out of stalkfields. Cornstalks which are left to leach and blacken and rot as they grew are indigestible at the best, and there is usually a lot of smut (ergot) and other harmful matter, the nature of which is not clearly understood, available in a cornfield. If a pasture such as has been described can not be provided, free range of some sort must be.

Brood mares are usually quarrelsome and many accidents are due to their innate meanness of disposition. One of the commonest sights on a large farm in winter is some cross old mare, with her ears laid back, rushing wickedly at some unoffending companion and chasing her off, for no other reason than that the ill-natured one is the boss. Often if some show of resistance is made, the aggressor will whirl and plant her heels in some more or less vulnerable part of the mare attacked. On account of this sort of disposition being common in pregnant mares they should have abundant freedom whenever any large number of them are turned together.

To turn eight or ten mares into a small yard is to invite trouble of a costly character.

The watering-trough is a fruitful source of grief. The boss mare always considers that she alone has a divine right to drink and she does her best to prove it by rushing the others away from the water. All this indicates that some common sense care of such animals at such times is essential. Another foolish trick we often see played is to turn a lot of mares and colts out at the same time and head them on the run for a narrow gate. Every one of them wants to go through the opening at the same moment, and accidents often result from their crowding. It seems to be a genuine pleasure to some cross old matron to lash out freely and bite hard when there is no show for her companions to get beyond her reach. It is far safer, though it takes a little longer time, to let horses out a few together and see that the cross mares are well outside the gate before the rest come to it. Also see to it that the gate is plenty wide enough. Use woven wire for fencing with one barb-wire on the top, not less than 52 inches from the ground, the woven wire being 48 inches wide. Keep fences in repair and allow no damage to go unrepaired a moment longer than it is necessary to fix it, once it is discovered.

It is astounding that men have seen the same old tricks of the same old mares for years, lost money by them and yet not moved a hand to

remedy the trouble. There is no sense in permitting mares to quarrel and jam and fight and crowd. If one is entirely boss of all the rest and is inclined to be reasonably peaceable she will not do harm if she is intelligently handled, but if she is wicked and vicious she should be kept by herself. It is all stuff and nonsense about the greatest mares always being cross. Mark this well: it is the little things that make for complete success. If only one-half of the colts which annually go wrong through carelessness of their owners should be kept right, millions of dollars would be added yearly to farmers' bank accounts.

Good shelter brood mares must have. The ideal condition is when each mare can have a boxstall to herself, but few mares are equipped in this way. The ideal breeding stable consists of boxstalls facing the south, with a small yard in front of each, the yards being separated by fences over or through which the mares may hob-nob for company's sake, yet not injure each other. Every farm, though, should have at least two such boxes. A good tight shed well protected on the north and west and open to the south will do very well for mares in cold weather if they have plenty of room. A spacious yard should be in front of the shed, facing to the south and well drained. A comfortable dry bed of straw should always be provided for horses young and old, no matter how they are kept. It

is comfortable for them to rest on and it absorbs the fertilizing elements. A wet place for horses to stay in, day or night, is very bad.

The watering-trough is usually in the yard, but no matter where it is it should always be raised above the level of the surrounding ground and kept dry by the plentiful use of gravel. A concrete trough is the best, with a concrete platform entirely around it, well founded and slightly above the rest of the ground. If ice accumulates around the trough in winter chop the ice away. Use a tank heater. Ice-cold water is bad for all horses, but do not go to the other extreme and get the water too hot. Just get the chill off. In any case always do something to insure dry footing that is not slippery around the watering place. If in mixed weather in winter ice forms in other parts of the yard, take the glare off it somehow so that the mares may not slip. It pays well to watch these minor points in raising horses. Well water is best for them to drink. Creeks and sloughs are frequent and fruitful sources of disease infection.

In feeding idle mares it is poor policy to let them run to hay or straw stacks at will and stuff themselves with coarse fodder. Bright clover hay that was gotten into the barn without rain and is entirely free from dust and mold is, used in moderation, the best possible roughage for brood mares and young horses. Remember

dusty, moldy or otherwise spoiled clover hay is about as bad for horses as it well can be. Alfalfa hay is much like clover and with both an equal quantity of prairie or timothy hay should be used. Well cured corn fodder may be fed in limited amounts, but, frankly, I have never liked it. I prefer whole fodder to the shredded article. If it is intended to use this sort of roughage for horse-feed, it is best to cut the corn when it is quite green, so that the product may be more nutritious and more easily digested when it is dry. Shredded fodder makes excellent bedding. Oat hay is palatable and excellent results are obtained from its use. Many who have used it report much advantage gained from feeding sorghum fodder in cold weather, say from the beginning of winter to the middle of January. After that sorghum should not be fed. It seems that the thawing weather usually experienced about that time and later works some change, probably of a fermentive nature, that does not agree with horses. Millet hay is an abomination and so is the so-called Hungarian. Too much hay is usually fed to all farm horses, even in idleness. It is never good practice to keep hay in front of horses all the time. They mess over it and cull out the choicest portions, and there is a lot of waste. Rather feed them regularly two or three times a day just enough so they will clean it up and come with keen appetite to the next meal.

Brood mares should always have grain during the winter. No set rule can be laid down as to quantity, but they should have enough to keep them in good strong round flesh without getting fat. The caretaker must gauge the ration necessary according to the need and capacity of the individual. Each mare should have her own manger and be tied up while she is eating. This takes time and some bother, it is true, but it pays. When each mare is tied up all accidents are avoided, and each gets just what she should have and what is intended for her. If mares are promiscuously fed at a large trough the stronger get the most and the weaker the least or none at all, and the proper order is just reversed. Moreover when they are tied up at feeding time the mean ones can do no harm and each mare is seen at close range at least twice a day, which is no bad thing in itself.

Stalls with mangers for grain feeding mares can be cheaply and strongly constructed. Common sense will dictate how. Let each mare be put in her place a few times and she will soon learn where to go. A horse learns most quickly through the medium of the feedbox. Keep halters on their heads and have a short rope fitted with a snap fastened in each stall. When the mare goes into her stall snap the tie-rope into the ring of her halter. When they are turned out of the stalls after eating, stretch a long rope run through rings on the stall posts and draw

it tight. This will keep the mares out of the stalls when they are not feeding or when they are not wanted there. The hay may be fed in racks.

Corn is a very general food for brood mares, but it is the poorest on the entire list, though not so bad when fed in conjunction with clover hay. Oats and bran form the best ration all winter long—about one-fourth or even one-third bran by weight. It is best to feed it dry. Sugar beets, carrots or rutabagas are excellent for mares in winter—indeed for all horses—and once they are accustomed to them mares may have them in large quantities, though perhaps some seven or eight pounds per head per day will be about right as a steady diet. They may be fed either cooked or raw, but preferably raw. Time was when I considered the feeding of sloppy stuff a necessity in properly wintering brood mares, but experience has shown me that dry feeding is best. Therefore I prefer uncooked food. Silage I regard as a horse killer, though some men say they have fed it with success. Any one is, of course, free to experiment all he wants to in feeding silage to horses if he desires to do so, but if fed at all it should be in such small quantities that it does not amount to much one way or other. Mark this, though: if the silage is moldy it will kill as surely as a rifle. Regularity in feeding is of much benefit. Feed

each day at the same hours, either two or three times.

In feeding horses it is well to remember that it is an easy matter to keep them fat and hearty if they are at first gradually accustomed to the food they are to receive and then are given plenty of it. It is the sudden and great change that hurts. As has been said before, there is no wonderful secret formula about the feeding of horses. The fattest horse I know is 27 years of age and subsists chiefly on stale bread and damaged bananas. Another very fat old horse I am acquainted with lives on edible refuse culled on a garbage route—cabbage leaves, banana skins, crusts and the like—with a ration of tough slough hay that by good rights should be used for packing iron castings. Thousands of horses live, work hard and keep fat or fairly so in the cities on alimentation that is merely trash. All of this I mention as showing that there is no wonderful occult science in feeding horses. It is largely a matter of hard common sense.

It should never be forgotten for an instant that there is a vast difference between the proper feeding of horses that are working and those that are idle. Brood mares doing nothing would not thrive on trash. They should have the best of everything and always the cleanest of food. Hence on the farm where the best is available, give it to them and give them enough.

Feeding succulence in the shape of the roots already mentioned is far to be preferred to the feeding of soft food. Carrots are especially beneficial. Any skillful veterinarian will tell you that sudden changes of food tend to cause indigestion with its train of troubles—colic, inflammation and the like. Sticking to a regular diet is best. Oats and bran with clover and wild or timothy hay and a few roots as described form the ideal ration for broodmares working or idle, for the reason that the grain and hay supply the necessary nutriment for the mare and the foal she is carrying and the roots keep the digestive apparatus in good working order.

In the chapter dealing with the physiological processes of conception it was made clear that there is no hocus-pocus to be invoked when mares are to be got with foal. If they are normally healthy they should conceive. If they are not normally healthy they either will not conceive at all or ocasionally at best. It is plain then that to turn a mare suddenly from a diet of dry grain and hay to pasture and from work to idleness will so upset the system as to render conception unlikely. Similarly to take a mare up out of pasture and put her on a diet of grain and hay will have no better results. When the mare is to be bred, let her be kept exactly as she has been kept, making no changes. The quieter a mare can be kept about the time she is embraced by the horse the better it will be for her. Long,

hard drives to and from the horse should be avoided. If it is desired to road a mare any great distance to the stallion, arrange to take her to him slowly and to leave her near him for a time.

A mare bred on the ninth day (or thereabouts) after foaling will quite generally conceive, but there is wide difference of opinion as to the proper day on which a mare should be returned to the horse to be tried. Authorities never have agreed as to this and probably never will. Mares differ greatly in the recurrence of their periods of heat, though not so much so as to render a general rule impossible. Each man should size up the condition of his mare with relation to returning her, but the weight of authority is in favor of around the eighteenth day, then the twenty-fifth and the thirty-second. She should have these three chances to take the horse before being considered safely settled. If conception has taken place the attentions of the horse in the teazing process will not cause the impregnation to fail.

Some mares show no signs of heat and steadily refuse to take the horse. This sort of a case is comparatively rare, but it is one that need cause no trouble. If a mare is never willing to be embraced by the stallion and it is desired to get her to breeding, hopple her securely and breed her anyhow. It will be found that she will come around more or less peaceably in from

18 to 21 days after being bred in this way. Incidentally it may be said that this is true of most farm animals—certainly of cows and ewes, as well as mares. Mares, of course, will make a tremendous fuss, but that must be put up with because it is for the good of all parties concerned. I have no intention of straying out of the equine field, but I have by advocating this practice helped more than one dairyman out who could not induce his cows and heifers to come around so that they would have their calves in the early winter. If any one wants good early lambs, moreover, let him get his ram so that he is not afraid—a good active chap—hold the ewe by the head, let the ram serve her, and then see if she will not come around lovingly in due course after the forced service. I do not advocate forced service except as a last resort, but it will work every time and there is no danger in resorting to it if the mare is so handled that she can not injure the stallion.

Always be careful to set down accurately the dates on which the mares were covered. On the average, as has already been stated, the pregnancy will last not far from forty-eight weeks, or about 340 days. A calendar costs nothing. On one that is of fairly good material mark the dates of covering and trying, then mark the day at the end of forty-eight weeks from the date of the last mating. As that time draws near watch the mare closely. Just how

close a mare may be worked to her book date no man can tell at long range, but usually up to within ten days, if the work is straight going and does not require backing up. Never make an in-foal mare back up a load. The most infallible sign of approaching parturition is the appearance of the wax on the end of the teats. This begins to show generally about three days before the foal comes. When the mare is let up, say about the 326th day, give her a roomy boxstall, cutting the grain ration in half, but seeing to it that she gets plenty of exercise at first. Reduce the proportion of grain and increasing the proportion of bran, but whatever food she is getting, make no sudden change —merely reduce it in quantity. See that the stall is freely disinfected, thoroughly cleaned and freshly bedded—and then keep it scrupulously clean.

After the wax forms on the dugs see closely to the mare, but do not bother her. Unseen watch her as well as it may be done, but by no means fuss around her, for there is no mare that will bring forth her young in the presence of man if it is to be avoided. It is necessary that the caretaker must be handy by at night to render assistance if it is needed, but the mare will be harassed hurtfully if she is aware that she is being watched. I have known a mare to stand all night when everything indicated imminent parturition, and then when I went to get a hur-

ried bite of breakfast in the morning, drop her foal with neatness and dispatch. On other occasions I have known mares, which knew they were being watched, stand until the foals came from them in that position. The wisest way is to fix some sort of a peep-hole and, making no noise, be able through it to see the mare but be unseen by her. Too much fussing at foaling time is worse than none at all.

If the mare shows after repeated effort that she can not deliver her foal and the presentation is normal, invoke the professional aid of the veterinarian, but do not be in too big a hurry about it. Give her plenty of chance to work out her own salvation and never go to pulling and hauling on the foal. If the birth is easy and normal let the mare and foal alone. If trouble of any kind is observed get to it quickly. Usually after foaling the mare will get up and try to see to her foal. After she is on her feet offer her a drink of gruel made by putting a pound of fine oatmeal in half a bucket of water from which the chill has been taken. Never try quickly to hoist the foal onto his feet and bundle him around to the dug to get his first suck. Take it easy. Any hurrying of his natural inclination is bad for him.

If the mare shows after a reasonable time that she can not deliver the foal, or if examination discloses that there is an abnormal presentation, send post haste for the veterinarian and

get him just as quickly as the best horse in the stable can travel. The foal should come, normally, first the forefeet, then the nose, and if these are not all in evidence, get the practitioner at once—on the dead run. It is amazing how much a mare can stand during parturition for so highly organized a form of life, but the fewer chances one takes the better it is. I make no attempt to detail didactically the various abnormal presentations, though they are comparatively common, for the reason that when the average man goes to fussing with a case of the kind trouble of the most troublous variety is on hand.

During the closing period of its fetal existence there collects in the intestines of the foal the fecal substance known as meconium. This must be got rid of shortly after birth and usually is, the milk in the mare's udder at parturition, known as colostrum, having an aperient action. There is nothing far out of the common about this colostrum. Its chief peculiarity physically is that its fat globules are very large. Its aperient action is due, probably, to its long retention in the udder and to the mild fermentive process which has been going on in it for some little time prior to its withdrawal. The milk which is secreted within an hour after the withdrawal of the colostrum has no aperient action to speak of, and hence it is believed that the action so necessary to the foal is derived from

some principle evolved during the retention of the colostrum in the udder, which sets up a mild form of indigestion and so induces the peristaltic action of the bowels which removes the meconium.

If the foal gets his first hold on the maternal dug within an hour from birth, that will be all right. Usually the meconium will pass away easily within five or six hours, but sometimes it will not. If it does not come within twenty-four hours and the foal presents a droopy, listless appearance, eye not bright, ears lopped over, then the first thing to be done is to give him two ounces of castor oil. In five hours more relief will usually have been gained and the appearance of the youngster will change greatly for the better. Peristaltic action will be caused and the fecal matter will be removed. At the time of administering the castor oil give also an injection of water at blood heat and a little glycerine—a teaspoonful of glycerine and enough of the warm water to make two ounces—not more. Inject this gently into the rectum with a common two-ounce hard rubber syringe and go slow. This will lubricate the passage and induce the foal to endeavor to pass the fecal matter. The meconium is in such cases a yellowish, rather hard, waxy substance. If given as directed the injection cannot do any harm and may be repeated every hour.

There is, of course, no digestive action in the

new-born foal. The entrance of something into the stomach is necessary to start the machinery into motion. If this is not affected by the colostrum, there is nothing so good as castor oil and the injection described. Never try to fill the little foal up with copious douches of soapsuds or even plain warm water. Only a very little is needful. To discover if peristaltic action—as the wormlike motion of the intestines is named—is going on, hold the ear close to the left flank of the foal. If all goes well the noise heard there will indicate that the small intestines are in working order, which is the first object sought. The noise on the right side will indicate what is doing in the larger intestines. If the meconium is not passed in six hours after the administration of the castor oil, the dose should be repeated.

Joint-ill, or omphalo phlebitis, as this disease is called by the veterinarian, is something of which every foal has to run the gauntlet. This disease is not caused by a specific germ, but is the result of mixed infection by filth germs. Aerobic germs are those which flourish in light and air; anaerobic germs those which thrive in damp places shut off from light and air. The mixed infection which causes joint-ill contains germs of both sorts. Stable litter is, outside of the dirt of the street, the most fruitful of microbe life of all common substances. Great care should therefore always be taken to have the

foal come on a clean bed, in a clean place thoroughly disinfected and well lighted. Sunlight is a great destroyer of filth germs.

Fortunately the micro-organisms which cause joint-ill are very easily destroyed. They may be said to enter the circulation of the foal by the large vein at the navel, or umbilical vein, and to prevent such entrance or invasion ligation of the navel or umbilical cord is to be advised. These same germs are always to be dreaded when babies are born, and we all know that ligation of the cord is always practiced in the human family. Being easily destroyed, these germs are readily combated by the application of any good antiseptic, but corrosive sublimate is to be preferred, using a 1-500 solution to swab the small portion of the cord left pendant from the body of the foal immediately after ligation—which means tying a string around the cord. Ligation should be as close to the body as possible, and the string should be surgeon's silk. The corrosive sublimate solution should be applied twice daily to the pendulous portion of the cord until it drops off. Remember these germs are everywhere. They are merely filth germs. The cleaner and lighter the place in which the mare foals the less will be the risk the foal will run of infection. Always clean out the stall after the mare has foaled and burn the litter. The fluids incident to foaling seem to promote germ production in an amazing degree.

After foaling the mare may have her ration gradually increased to its usual size. As a rule when a mare has been worked regularly almost up to her parturition a holiday of two weeks after it should see her in shape to go back to light work. About the third day, or even on the second, if the weather is fine, give her a chance to get out into some dry lot for exercise. At the end of two weeks she should have been gradually gotten back onto her usual feed and of course she should run out in the lot whenever she wants to. When it comes time to put her back in the harness leave the foal in the boxstall when she is taken out to work. He will fret at first, but he will soon get accustomed to doing without his mammy. At first work the mare but half a day. She will be soft and worry greatly, probably heating herself up quite badly. A good plan in such cases is, on coming in at noon, to milk the mare almost dry and then put her in a stall in the work stable to eat a little hay and cool off. After she has cooled off so she may be watered she may be taken to the boxstall, turned in with the foal and fed her grain. Beginning with half a day in this fashion, she may be gradually toughened back into doing her full share of the regular team work. Never let a foal suck milk from a warm mare. It sets up indigestion and starts scours. Keep a bucket of water in the boxstall so the foal may take a drink whenever he wants it.

Quite often it happens that a motherless foal has to be raised by hand. This is an easy enough job, but it is one requiring an infinity of care and patience. It may be set down as a fact which there is no disputing that a newly born animal never needs much food. I have twice reared foals which never sucked their mothers. The milk of a mare has more sugar and less fat in it than the milk of a cow, but the difference is not so great that there is any danger of killing the foal by feeding it cow's milk intelligently. Most mares' milk will show not quite 3 per cent of fat, most cows' not quite 4, so that the difference is not so very decided after all. In rearing a very young orphan foal get the milk of as fresh a cow as possible and the poorer in butter fat the better. Do not use Jersey milk for this purpose. Take a dessert-spoonful of the best white granulated sugar and add enough warm water to dissolve it. Then add three tablespoonsful of limewater and enough new milk to make a pint. A costless apparatus for feeding the foal is thus contrived: Get an old teapot and scald it thoroughly. Over the spout tie securely the thumb of an old kid glove, and with a darning needle pierce holes in the kid. Warm the milk to blood heat, pour a part of it into the teapot, and when it flows through the spout into the glove thumb, an excellent imitation of the maternal teat will be formed, which the foal will suck promptly. Let him have half a teacup-

ful every hour at first. It is a bothersome chore, but it must be done. If scours supervene, give a dose of two ounces of castor oil and discontinue the milk for a couple of feeds, giving the sugar and limewater as before, but substituting plain water for the milk, or feed nothing at all. Foals reared by hand will scour more or less, but the castor oil will generally fix them up all right.

As the foal grows older day by day the quantity of milk fed may be increased and the number of feeds decreased until according to his thrift he may be fed first six times a day and then four times. If he is carried along nicely he may at the end of three weeks be fed the milk and limewater or milk alone from a bucket, eliminating the sugar, but he should never be given all the milk he will drink at that age. Watch closely for signs of scouring, which are a sure sign of indigestion, and cut down on the quantity of milk fed for a day. Give castor oil as before only in three or four-ounce doses. Always have fresh water so the foal may drink if he is thirsty.

A foal should begin to nibble at grain when he is around a month old, sometimes earlier. His first food should be oatmeal. He should be allowed such trifling quantity of this as he will eat. It will only be a very little at first. When he is six weeks old a little bran may be added. At two months old some sweet skimmilk may be substituted for part of the new milk and so on

until when he is three months old the orphan foal may have about all the sweet skimmilk he wants three times a day. He will then be eating plenty of grain and grass and he should have hay if he wants it. Let him have grass as soon as he will eat it. Never feed sour milk or sweet milk from unclean vessels. Keep him in a lot near the house and give him company if it is only a runty calf. Pet him and coddle him all of the time that can be spared and in general treat him as every orphan should be treated—with loving kindness and care. Never confine him closely in a stall. Let him run. The rearing of a motherless foal is mostly in the man or woman who essays the job.

Foals to develop to their best should have about all the grain they will eat, and their dams should be well fed also. If the mares are worked their feeding need not bother any one. Their foals should have oatmeal and bran as already described to eat at will, only a little at a time, and the supply renewed often so as to keep it always fresh and sweet. As a general proposition I do not favor turning out on grass at night any horse that is working regularly, whether it is a nursing mare or any other work horse. It should be either one thing or the other—work and dry rations only, or grass and idleness; the two will not mix to advantage. The fill of green grass which work horses get at night in pasture does them no good and it saves

nothing. If horses are to do a proper amount of work they must have about so much grain and hay anyway, and the fill of grass they get in pasture between dark and sunrise serves merely to overload their digestive apparatus. It is better to keep them in the stable and let them rest in peace. It is a mistake even to turn them out on Sundays or on odd days when they are not working. If they must be idle, reduce their grain rations and let them stay in the stable and rest. When the foal gets old enough he may eat grass if he wants it and his grain as well, but the milk he sucks should always be the same. Hence let the feeding of the mare be uniform.

Mares that are kept in idleness must be turned to pasture for economy's sake, but they must also have grain and some hay, in varying proportion according to the growth of the grass, but always some. Shelter, too, is essential, not merely woods or a hedge, but a shed that is airy and dark into which they may run in the heat of the day to escape from the persecution of the flies and during hard storms. Somewhere close to the shed rig up a trough from which the foals may eat grain and around it construct a creep through which the foals may enter, but which will turn back the mares. This may be built satisfactorily by sinking posts in the ground around the trough at a distance of ten or twelve feet from it, and spiking round poles

MARES AND FOALS IN PASTURE

to them high enough so the foals may go under them, but too low for the mares to crawl beneath them. The foals will soon learn the trick. The mares should be fed elsewhere.

If the mares are not provided with a shed as described they should be taken up and housed during the hot days of flytime and turned afield again at night. They should have bright hay to eat in addition to their grain during the day time and as the pasture grows more scanty in the fall their rations should be increased. Pasturage may be supplemented by green cornstalks, if only the latter are introduced into the diet gradually and the young ears may go with the stalks for a time. Then tear the ears off the most of the stalks. Let the foals have all the grain they want all the time. This with shelter in which to gain surcease from the troubling of the flies will keep them growing as they should. I do not know of anything that looks more like willful inhumanity of the most atrocious character than a bunch of mares and colts standing in the fence corner of some bare, brown field in the broiling sun without anything to eat, tortured by the pestilential flies and stamping their feet to pieces in their efforts to rid themselves of their pestiferous winged enemies. One of the most inhuman torture schemes of the most degraded of the human race is to tie a captive enemy to a stake in the sun and let the flies have full swing at him. Headhunting is a

humane sport compared to this. The effect of fly-fighting in scanty pasture is always distinguishable in the lean, stunted appearance of the poor animals so abused. It does not make much difference what mares are fed on grass so long as their feed is not suddenly changed.

If foals are thus cared for during the summer the weaning process is an easy one. When a foal is five months old he should be weaned. It is best to take him away from his dam for good and all when the break is made, cut down her grain ration and milk some of the milk from her udder three or four times the first day and so on gradually decreasing until the flow ceases entirely. Work the mare right along. If she is not worked, cut out the grain ration altogether and feed hay only. Then when the mare is dry begin the grain feeding lightly once more.

Finishing up the foal business there is no reason why mares should not produce fall colts if they happen to miss in the spring. If a mare is to be bred in the fall let it be not earlier than November, so that the foal may come in October after the frosts have put the flies out of commission. A fall colt must be permitted to exercise. He may be allowed to potter about the farm buildings in a sort of go-as-you-please manner, picking his grain where he finds it, and he will, if he gets enough of it, grow finely. If he is shut up in a close stall he will surely go wrong. On the whole, however, it is much bet-

ter to have the foals come in the spring. The chief advantage in having a mare bred in the fall is that it saves keeping her unproductive for a period of six months.

Weanlings should have snug quarters during their first winter. Put them preferably two in a boxstall and feed them good oats and bran—one-fifth bran by weight—all they will clean up nicely and come hungry to their next meal. Feed them the choicest hay on the place, always free from dust and mold, and feed them often—a little at a time. No one can rear young horses properly without grain. Mark that well. Winter and summer they should have good grain feeding. Few, however, will give it to them. I have never yet been able to discover why many a farmer will feed 75 bushels of corn at 40 or 50 cents a bushel to a steer to make him weigh say 1,500 lb. and then sell him for 6 cents a pound, or $90 in all, and yet begrudge a single ear to a colt that at the same age on the same amount of grain might have been sold for $150 or more. Right now the same quantity of grain that will put a $90 steer on the market fat will put a three-year-old colt in shape to sell for twice the money—and yet few men grain their colts. Keep their feet level and their toes short.

In pasture yearlings and two-year-olds should have grain according to the growth of the grass and the season. Keep them growing and fat, and always see well to their feet. Give them

shelter into which they may escape from the attacks of the awful flies. These flies cost the farmers of the United States millions of dollars annually in lost horseflesh; any man is losing money when his horses are losing flesh. Do not close young horses in a field with cattle, sheep and swine, if it can be avoided. They do best by themselves or with cattle—always poorly with sheep and pigs. House them warmly in winter and always keep them growing and fat. This theory that forcing a colt to root up his living at some old straw stack on the lee side of a barb-wire fence makes him tough is all tommyrot. Such practice merely prevents the colt from making such growth as he should make, and what is more, it is inhuman, and the man who is guilty of it is deserving of the attention of the Society for the Prevention of Cruelty to Animals. If he can not see that he is depleting his pocketbook he should at least be estopped from cruelly mistreating his dumb animals.

Stallions will, of course, have to be taken up and kept by themselves the summer after they are a year old. Many a foal has been got by a yearling. Regarding the best time to castrate colts men always have differed and always will. As a rule it is best to order their castration when they are about a year old. If one is undeveloped about the head and neck he may be allowed to run entire for six months or a year longer. The castration of horses at any age is a

simple operation and when performed by a qualified practitioner adverse results are not to be expected. There is very little risk in castrating even old stallions. I have seen them altered at all ages from two months to seventeen years. I never knew one castrated at a very early age which developed an attractive neck and head. The longer a stallion remains entire the heavier and coarser his head, neck and shoulders will become. A stag—as a stallion castrated after maturity is called—is seldom of much account in the harness. His great heavy forehand is too much for him to navigate with after he is deprived of his masculinity. Many of the stallions which in their middle age have been converted into alleged heavy harness horses have been a byword and a derision for the reason that they tired so easily and mostly on account of their too heavy heads and necks. Methods of rearing young stallions from two years old have already been discussed.

Another point on which there always has been and always will be a difference of opinion is as to breeding two-year-old fillies. In my opinion there is no reason why fillies of this age should not be bred, provided that they are well grown and their owner is willing to feed and care for them properly during their pregnancy. Nor do I believe that there is any reason why a mare which has a foal when she is three should not be bred regularly year after year—when she is

three and four, and so on—though it is a quite general custom in Britain to breed mares when they are two, let them go over at three and breed them again at four to foal when five years old. A poorly nourished, anemic, stunted two-year-old filly should not be bred. This applies to all sorts of horses and ponies. The breeder who does not develop his fillies properly on judicious and plentiful feeding should not essay to breed them as two-year-olds.

Regarding the growth of horses, it may be said that roughly speaking a colt which is properly reared will make rather more than half his growth in his first year. This rule will of course be more or less upset in abnormal cases, such as when a colt is badly treated during his first year and then given good care during the next three, but in such a case he will never come to be what he would have been had he been handled aright and kept growing from birth onward. The larger the ultimate size is to be the greater the proportion of it will be made the first year. The draft-bred foal that does not weigh 1,200 lb. or over the day he is twelve months old will have a slim chance to fill a drafter's bill. The best plan is to give them always what grain they will clean up nicely and let it go at that. It is bad at any time to let colts get thin. It is worst of all to let them lose the flesh that was born on them. It is very nearly as bad to let them get thin after weaning. Loss sustained at such times will never be regained.

Breaking a colt should begin when the youngster is a few days old. Fit a little headstall to its head and leave a strap 6 or 8 inches long hanging from it. Catch the foal by this strap often and get him thoroughly accustomed to being handled, to close association with mankind, to have his legs rubbed and his feet picked up. A foal is a friendly little fellow as a rule and likes to play and be petted. I have had three or four of them at a time that I would wrestle with, putting their forefeet on my shoulders. It is always bad to "baby" a horse, but with a foal it is different. Familiarity with mankind and the consequent fearlessness accruing are safe insurance against trouble when it comes to breaking to harness. Early teach the foal to lead. Have a fairly long lead-strap, get behind him and make him go ahead. That is the right way. The wrong way is to get in front of him and try to drag him along. Gentle persuasion with the whip may be necessary, but if the foal has been gently handled he will not be afraid and will quickly learn to go on about his business. Make him do whatever you set out to teach him to do. Breaking colts or horses is much like raising orphan colts—it is largely in the man. A horse, young or old, is a stupid sort of a beast at the best and unless he is intelligently raised is possessed by fear. Then under strange circumstances he will do anything and everything which he ought not to do; he gets rattled and

then he does not know what he is doing. On the other hand if he has confidence in the man who has hold of him, his master's voice will reassure him.

There is a whole lot too much fuss, as a rule, made about breaking young horses. If the breaking is made a gradual process it will come to a head much as a matter of course. If they are allowed to run practically wild until three or four years old and then suddenly caught up and the effort made to force them to do something they know nothing about there will be trouble and there always is. It may be advanced that farmers have not time to fuss with colts as advocated. That is a poor excuse. The farmer who has not time to fuss with that which puts dollars in his pockets would better be in other business.

I figure that it is best to break colts and accustom them to the harness at two years of age. First of all, on the farm, take a thick straight bit and buckle it in the mouth with two short straps to the square irons in the ends of the cheek pieces of the halter. Let them stand tied in the stall and they will mouth and champ on the bit and so toughen the cheeks, or parts of the lips which the bit contacts, in that process.

Now get ready a leather surcingle with a loop strap on top and buckles stitched half-way down each side. Buckle the surcingle around the colt's body and adjust a check rein moderately tight.

Or if desired a regular bitting harness may be used. This consists of a bridle and check-rein, a surcingle and crupper and two side lines, running from the bit to buckles on each side of the circingle. The bit in a bitting harness usually is a thick snaffle with a line of little metal pendants called "keys" hanging to the joint in the middle of it. The object of these keys is by annoying the tongue to make the colt champ the bit and so toughen his cheeks. After the colt has been allowed to go awhile with his head checked up, attach the side lines and buckle them moderately tight. Turn him out thus rigged into the yard and let him go a few hours a day for a week. Then substitute real reins for the side-lines and drive him around until he knows how to guide this way and that, to stop at the word "whoa" and to step up when directed. Break the colt to stand absolutely still when being harnessed. That is a first essential. A horse that is perpetually stepping around while being harnessed is but half broken at best. Also, when the time comes make him understand that he must stand stock still while being hooked up to any kind of a rig and stand there until he gets the word to move on. Do not forget this. It means money. Horses of the roadster stamp, or any other stamp for that matter, are often indulged in lunging forward the moment they are checked up. This is all wrong. A gentleman's horse is broken so that he stands until his owner

adjusts his apron or robe, takes up his reins and gives the word to go on. The time to teach a horse these pleasant ways is when he is first broken. Likewise teach him to back pleasantly and always with a pull of the reins. Do not try to teach the colt too much, but insist that he stop as instantly as possible at the word "whoa," back when told to do so and the pull on the reins shows what is wanted, and to get up promptly when the word is given. Heroic measures are sometimes necessary, but as a rule the exercise of gentleness will win out sooner. A horse is a stupid beast and infinite patience, coupled with determination, is absolutely necessary to do much with him. Some men think that they are making something by going into a small yard armed with a whip and making a colt do stunts. I have never been able to see where they gained anything, for the market for circus horses is limited and a colt needs only to be broken to harness properly to make him worth all the money he will ever bring.

After the colt has been driven around by the reins and has learned to guide to the right and left, to turn around, "get up" and "whoa," hitch him into a long-shafted breaking cart single, or double with some steady-going horse, not necessarily an old one, but always reliable. It is a mistake to hook a colt up the first time with some old plug that can not get out of his own way. He will never step fast enough for the

young one and the latter will fret and worry. There are easier and shorter ways to break horses than this, but it pays to take time as described for the reason that the process outlined if followed will develop a mouth not too hard and not too soft, and that is worth money either to sell or tc keep. Remember that a horse is a creature of habit. It takes repetition to drill things into his brain. His instinct is admirable. He will bring you home safely the darkest and stormiest night that ever blew and the next day bolt and wreck the rig because he chanced to meet a black pig when he was habituated to meeting white pigs in that particular spot. When he is young his brain is more plastic and sensitive to impression than when he grows older. Habits he contracts at two years old will be retained through life.

When colts have been well broken as two-year-olds they may be turned out for the rest of the year. They will never forget their lessons. There is no sense in trying to lay down set rules; these very general directions must serve. The man who breaks colts finds some new situation to deal with in every one he undertakes to educate.

In all cases the bitting should be done as outlined. See to it that the bit is always high enough up in the mouth. Keep it just so that it will not unduly press against the cheeks, but at the same time not so low that the horse will be

everlastingly hitching at it with his tongue trying to keep it comfortable in his mouth. Go easy with them all at first, but go through with everything that is undertaken. Never under any circumstances try to make colts pull out of a place where they have been stuck. One of the surest ways to make him balky is to get a colt stuck and then lick him because he has not strength to pull out his load. More than once on the soft prairie soils of the West I have had the wagon wheels cut down in the sod in springtime and, after throwing off the small load of hay I had on at the time, started up the team of three-year-olds I was driving onto dry ground, and then carried the hay forkful by forkful out of the slough and loaded it onto the wagon again. It was deplorably hard labor, to be sure, but it paid.

Rarey was a great handler of horses of some sorts and his tackle was a great invention. This tackle consists of two short straps fitted with D rings, a surcingle and a long rope. The straps are buckled around the front pasterns, the surcingle around the body. One end of the rope is spliced into the ring in the strap that goes around the pastern of the near fore leg. The free end of the rope is then passed through a ring on the underside of the surcingle and then down and through the ring in the strap around the pastern of the off fore foot. Then the rope end is brought up and passed through a ring

sewed about half way down the off side of the surcingle. The horse can walk all right, trot and even run when the rope is slack, but a steady pull on the rope will jerk his fore feet up against the floor of his chest and down he goes on his knees and nose. A rasping hard fall takes the tuck out of most horses, two or three will usually do the business for the most incorrigible, but it is a dangerous game to play.

I have mentioned the Rarey tackle only for the reason that its general use in colt-breaking has been advocated by one or two writers in high position, whose experience with it can not have been extensive. It should be used in colt-breaking only as a last resort. Horse-breaking, to be sure, is no job for a nursery governess, but there are only a very few colts—probably not one in 5,000—that ever need a fall in the Rarey tackle.

Once upon a time I was employed by an importer of coaching stallions and one of his chief talking points was the facility with which the imported stallions of full age could be broken to harness. When some customer announced that he had to be shown the foreman and I took occasion to put the stallion in question through a course of sprouts with the Rarey tackle in a long shed deeply bedded with shavings, and then sallied forth with him. As soon as the horse felt the body band of the harness tighten around him he was in mortal terror of being thrown

upon his head again and usually stepped off in the long-shafted cart like a little lamb. Finally the foreman and I broke the neck of a valuable horse one day with the tackle and the talking point vanished like magic. Incorrigibly vicious horses may need Rareyizing, but these are few and far between and no farmer need ever find use for the tackle if he knows his business even in an elementary way. On the contrary the Rarey tackle is a tool to be used only by the thoroughly experienced. It is by no means a necessary farm implement.

Good harness is one of the best advertisements a farmer or breeder can have. It is economy to buy good leather and then keep it in good condition. There is a bit of a trick in hitching up a horse just right, but it is hard to state it didactically. In general the harness from the bridle to the crupper should fit "neither too free nor to bind"—meaning neither too loose nor too tight—but how can that happy medium be taught through the medium of cold type? It is worth dollars, though, to have the harness fit just right. The horse will work more contentedly and move more freely. The main thing is to have the harness good, have it fit right and then keep the life in the leather. Harness oils and dressings are cheap and it does not take long to fix up a double set. Keep the metal housings bright and clean.

A farmer's business needs advertising just as

much as the merchant's. No one need think that the packers and other great mercantile houses go to tremendous expense for fine horses, harness and rigs for nothing. The financial prosperity of any firm may usually be gauged by its horses and wagons as turned out in the street. So it is with the farmer. Show me the farmer who drives to town a finely conditioned pair of horses, geared with good leather and hooked to a clean well cared for rig, and it is the one best bet that you are showing me a man whose credit is good at the bank and store. The banker, mostly a shrewd judge of men and manners, knows that the same qualities in human nature, which are reflected in such an outfit, make for success in business. On the other hand tatterdemalion harness and ramshackle, filthy rigs indicate qualities and character which bankers do not cotton to when it comes to lending money over their counters.

CHAPTER VII.

FITTING FOR SALE.—MARKET CLASSES OF HORSES.—TRADE TERMS.

To sell to the best advantage horses should be fat and well broken—the fatter and better broken they are, the better they will sell. Hence it pays to accustom all farm horses to as many of the terrifying sights and sounds of city life as may be met up with in the country—the locomotive, the trolley car, the automobile, threshing machines, motorcycles and the like. I once knew a man who did a mighty good job on his young horses by taking them often to a spot on the road over which the railway crossed on a high bridge and fill. It so happened that a passenger express, a local passenger train and a through freight came along one after the other about six o'clock in the evening, and it was rather the exception, spring, summer and fall, not to find him thereabouts at that time. His horses learned to let the trains go by above them when they could see them and when they could not see them, and as each train always whistled just as it passed over the bridge, the education was pretty thorough. This man was continually showing the locomotive and the trolley to his colts under divers circumstances and he enjoyed a steady demand for them at good prices even during the dull times.

"Family broken" means a whole lot more now than it did a decade ago. Then a horse which would pass a traction engine and a separator all right was esteemed safe. Now that automobiles and trolley cars dot the landscape and the motorcyclist goes whizzing by, it is altogether a different story. A horse that is afraid of automobiles or trolley cars or locomotives is not worth a dollar for use anywhere near a large city and that is where the best prices are to be obtained. It is best to begin young with them. They learn more easily then. There should be no mistake about this, no maudlin sentiment about the wrongs the automaniacs are inflicting on the farmer. The auto has come to stay. It is an accomplished factor of modern civilization like the locomotive and the trolley car. Just laws are needed to curb the ambition of the madmen who career along the country roads too fast, but the automobile must be reckoned with first, last and all the time. I have driven over most of the country surrounding Chicago. I know whereof I speak, the while sympathizing deeply with the inhabitants of rural districts traversed by roads which invite the crazy autoist. Nowadays when a young horse will stand fearlessly with a locomotive in front of him, a trolley car passing behind him and an automobile stationary but panting alongside of him, he may be considered very fairly

broken for a country horse, but he will still have much to learn.

This is not the place to discuss the auto-on-the-rural-highway question. The horse must accommodate himself to the auto with its blinding headlights, the trolley car and the locomotive or go out of business. The law says that the auto has as much right to use the public road as the pedestrian or the horse, and no more, and the owner of the horse might just as well make up his mind to that fact first as last. It is no small trick to break horses to autos and trolley cars, but it can be done and it must be done if the farmer is to get all that is coming to him for his time and investment, not to speak at all of his personal safety and that of his wife and bairns. It is an un-American position to take that because autos are common the wife and babies can no longer drive on the public road. That sort of spirit would never have wrested from Great Britain the independence of which we are so proud. There are horses now and there will be horses after we are all dead. Make them safe for the women folks to drive. It has to come.

To offer a thin horse for sale is to invite for him a lower price than he should bring. The trade demands fat horses. The farmer can more easily afford to feed his grain to horses than to any other domestic animal. Some one has to put the animals in condition and if the farmer

FINISHED DRAFTERS READY TO SHIP

will not do it, the feeder must, and the price the farmer receives must be lower in consequence. Many a time I have seen grain pay the farmer a dollar or more a bushel when used in fattening horses. The experiments made along this line by the Illinois Experiment Station are right in point here. I commend the bulletin describing them to all farmers. This feeding process is an easy one. Put the horses in stalls, tied by the head. Feed them all the grain and hay they will clean up and give them all the pure water they will drink. They must be brought to full feed gradually and the food must not be changed. Exercise is not necessary. Big drafters will gain as much as five or six or even seven pounds a day on all the corn they will eat. The feeders who make a business of fattening drafters for the market use corn mostly, with sometimes a little bran, and they never change the feed from the time they start the horses until they land them in the market. This rule of no change applies absolutely.

In the great markets horses are classed according to their "job." Attempts have been made to differentiate sharply between the various classes, but I shall make no effort to draw any strongly marked lines, for the reason that it is impossible to do so. One cannot mark didactically lines that exist only in the most shadowy form at best and are constantly changing. Classes go by certain names all over the

country, but the horse that is referred to in one part of the country by one name may be very different from the horse which is referred to by identically the same term in another. If any one desires to post himself on this phase of the business he would best stand by the loading chutes in any of the great wholesale markets and note the horses that are shipped out to the various parts of the country. He will find, for instance, that Boston wagon horses, New York wagon horses and Pittsburg wagon horses are three entirely different sorts, though they are all wagon horses. How then is any one to explain didactically what a wagon horse is? Following, however, is a sketch in outline of market requirements.

Just at present horses of draft blood are classed as drafters, loggers, feeders, wagon horses, chunks and farm workers, and with the exception of the first named two it is not always easy to separate them. Expressers form a class by themselves. Then come southern chunks and riff-raff. Horses without any draft blood in them at all—at least visibly so—are classed as gentlemen's roadsters or light harness horses, heavy harness horses, business or pleasure horses variously so-called, livery horses, southern drivers and other intermediate sorts of no special class or calibre, such as hearse horses, for which there is always more or less of a demand, and a few other kinds for which a spo-

radic inquiry develops periodically—spotted circus horses, for instance. Horses for the fire, patrol wagon and mounted police service come from the ranks of the expressers, being selected, the first two on account of strength and speed on the run, the latter for more or less excellence of saddle conformation, substance to carry weight and a bit of good looks as well. Cavalry and artillery horses are taken periodically by our own government and by foreign powers. The cavalry horse mostly purchased by Uncle Sam comes from the ranks of the business or pleasure horses and is mostly of trotting blood. No uniformity of type is insisted on. They come in all shapes, these troop horses. Officers' chargers are preferably of the conformation of the Kentucky saddle horse. Artillery horses are light expressers, weighing around 1,250 pounds, and like the fire and patrol horses, able to run.

Drafters run in the trade from 1,600 pounds upwards. The larger they are, the fatter and the more quality they possess, the better they sell. Loggers are inferior but big drafters. Wagon horses are a numerous delegation. They come in all sizes from 1,250 pounds to 1,450 pounds, and in all shapes from the classy one almost a coacher in conformation and used to draw the delivery wagon of a dry goods house, to the roughest sort of a team fit only to pull dirt out of an excavation. The Boston wagon

horse weighs around 1,400 pounds, is preferably rather light in bone, of build almost typically Percheron and always very smooth. The eastern wagon horse, taken mostly for New York trade, is coachlike in conformation and quality, smaller than the Boston article and handsome. The Pittsburg wagon horse is a ruggeder proposition altogether and in weight around 1,450 pounds. This shows how futile it would be to try to describe wagon horses as a general classification. Chunks are short and thick and drafty in conformation, range in weight from 1,250 to 1,550 pounds and are variously sorted for various localities. It is not easy to divide them off from the wagon horses. Southern chunks are light, weighing around 1,100 pounds or thereabouts, with less draft blood and more warm blood about them than any of the foregoing classes. Farm workers are anything and everything. If a horse in late winter and early spring will not class anywhere else, he goes as a farm worker or farm chunk. Feeders are thin horses of the drafter class.

Expressers may briefly be described as overgrown, low-quality coachers. They must have a bit of draft blood about them to give them size, but it must not show in preponderance. They must be able to get out and trot quickly and nervily with a big load behind them. They range in weight from 1,250 to 1,500 pounds—high-headed, smoothly turned, good-acting

THE ARMOUR CHAMPION DRAFT GELDINGS
From photo taken during their tour of England, 1907

horses with considerable style. Formerly bussers and cabbers, taken chiefly for export to England and France, and tram horses were accounted distinct classes that tailed on after the expressers, but the demand for them has disappeared and nowadays one rarely hears their names mentioned in the trade.

Gentlemen's roadsters have the type of the trotter—breedy, long-necked, elegant horses suiting the light buggy or speed wagon and able to go along at a smart rate of speed. In fact the ranks of the road horse are properly recruited from among the harness race horses, both trotters and pacers, and to sell well a road horse nowadays must be able to beat 2:30, probably quite a good bit. Then these which cannot trot or pace fast tail on down in all grades to the cheapest sorts which are taken for the livery and southern trade. Of late, however, the South has been buying a better grade of driver, taking business and pleasure horses at $160 to $185, whereas the demand from south of Mason & Dixon's line was formerly for cheap lots at $65 to $115.

Heavy harness horses are divided into two sorts—the park horse and the carriage horse, the runabout horse being a sort of hanger-on to the skirts of both. The park horse runs in height from 14.3 hands to 15.2¾ hands, and the carriage horse from 15.3 hands upwards. At least that is the distinction drawn for these

sorts at the great horse shows. The park horse and the carriage horse have the same conformation, but the park horse must have as an absolute essential high, snappy action. The step of the carriage horse should be more commanding, as befits his greater size and the heavier vehicle which he pulls. Conformation of these two sorts is of the round-built order, round quarters, round barrel, fairly short legs, neat, long, well arched neck, clean cut at the throttle, neat head, sloping shoulders and clean bone, the more the better.

Typically the correct action of the park horse in front may be described as that the foot should be raised and lowered as though, so to speak, following the rim of a rolling wheel, being brought forward and upward, reaching the ground again in a graceful curve. Many horses can jerk their knees up high and then slam their feet down again on the ground not far from the spot where they picked up, but that is not good action, no matter how high the knee may be hoisted. Similarly some horses can get their knees away up when going at a three-minute clip and not until then. That will not do, for the street traffic regulations do not permit the exhibition of so much speed. The heavy harness horse must go high when going slow. The hocks should be kept well together, flexed sharply, brought well upward and the foot thrown forward well under the body. The ac-

tion of the larger horse dwells somewhat, permissibly, and is therefore more deliberate, but it must be high all around.

Runabout horses are used singly. A runabout pair is very much of a farce. This is a nondescript article in horseflesh, of varying size but never large, ranging perhaps up to 15.3 hands and from that down to 14.3, with a bit of speed, a bit of action, more or less of the conformation of the park horse, but not his action. In short, the runabout horse is about half way between the roadster and the heavy harness horse and generally he is docked, though not always.

As the class of farm workers includes everything that is not of sufficient size or merit to go into the higher-priced lots, so the business and pleasure class may be said to be a very elastic one. A horse may be mighty useful and yet not class as a roadster, park, carriage or runabout horse. The more inferior lots of the trotter type fill the livery stables and the more chubby ones go into buggy work in the cities, the South taking many of each kind. A hearse horse is a light expresser which happens to be black in color and may weigh as much as 1,300 pounds. I want to say again that it is useless to attempt to explain by rule of thumb the dividing lines between the various market classes, more especially nowadays when the demand for horses exceeds the supply and buyers are will-

ing to put up with makeshifts if they can not find just what they want.

Cobs properly speaking do not stand over 14.2 or 14.3 hands at most, though horses standing 15.1 hands—sometimes even more—are often miscalled cobs in the trade. Cobs are the connecting link between the ponies and the horses. They are large-bodied, pudgy, chunky beasts, not horse, not pony, but half way between, short of leg and properly with high action. Ponies run in all sizes from 14.2 hands down, the various common sorts being described in the subsequent chapter devoted to them.

Saddle horses include, as the market classifies them, the five-gaited or Kentucky horse, the three-gaited or walk-trot-and-canter horse and the hunter. Special reference to them will be found further along.

By continuous effort the Stock Yards Company has made Chicago the greatest point of concentration and distribution of horses in the West. Therefore Chicago substantially dominates values of horses for most of the country. Its market gets the best horses in the region tributary to it and all the largest and best buyers in the eastern and southern cities are continually represented at the ringside in the Dexter Park Pavilion, commonly known as the "bull-pen." A sharp man is he who can hold his own in any horse market and to get to understand all of the trade terms is no mean trick of itself.

Here some of the Chicago trade terms are explained. The shibboleth of the professional horse dealer, however, varies.

Horses are mostly sold at auction in the great markets of the West. In Chicago and generally elsewhere they are sold under certain stated conditions, which are well understood. If a horse is sold "to be serviceably sound" he must have nothing wrong about him that will materially impair his value as a worker at his business. In other words, he must be practically sound in wind, limb and eye and body, have no bad habits, must pull true and be well broken. A horse that does not fill this bill or any other form of guarantee may be rejected and thrown back on the hands of the seller at any time before noon of the day following that on which the purchase was made. A horse may also be sold "to be serviceably sound" with some defect pointed out, which goes with him. It is only once in a whole that horses are sold as "sound," and then only to "start something." "Legs go" means that whatever is on his legs goes with the horse, but he must be right in his wind, pull true and he must not be lame. "To wind and work" predicates that the horse is sound in his wind and will work all right. "Worker only" means that the horse will pull true and nothing more. "At the end of the halter" indicates that the purchaser has bought a horse, when his bid is the last one accepted by the

auctioneer. There are quite constant modifications of these conditions by the pointing out of imperfections.

The most astounding practice about the horse business in a professional way is the "bush." If a definition of this term should be inserted in Webster's Unabridged Dictionary it would probably read about like this: "To bush.—To force or cajole the seller of a horse to refund to the purchaser a portion of the price bid in the auction ring." There are various reasons for this "bushing." A buyer may find something on the horse which he did not see in the ring. Then he may insist on a reduction of the price and the vendor will consent to be "bushed" rather than run the risk of a rejection. Sometimes the seller will submit to the process on the statement of the buyer that he has bought the horse too dear. "Bushing" is necessarily a sort of a private transaction and it would therefore be useless to go into further detail. Many a horse has, however, gone through the ring with the "bush" arranged beforehand, which is another way of saying that the horse was bought before he was auctioned off.

In the vernacular of the bull-pen there are many terms and expressions which may be explained. The most incomprehensible I ever heard was "bush and a gristle," which indicated that the horse had an incipient sidebone and was sold subject to a reduction of the price

bid. "A hair or two off above the hoof" means that the horse has a wire-cut, which may be as big as the palm of your hand, but having been pointed out, goes with him. "A little bit of a speck in one eye" guarantees one good eye—no more, no less. "A little bluish in one eye" means the same thing, and so do "a little smoke" and "a little feather." "Which eye?" queries some one in the crowd. "Don't know," replies the seller, and thereupon no guarantee goes with either eye. "A little rough behind" indicates that the horse has a spavin or thoroughpin or some other unsoundness about his hocks, and it all goes with him. "Makes just a little noise" is one way of saying that a horse is off in his wind or "windy." "Jacks" are bone spavins. "Michigan pads" are long-shaped puffs on the outside of the hocks below where the thoroughpin shows. "A little rounding on one hock" implies that the horse has a curb and if some one believes that there is something wrong with a horse which cannot be readily discovered he alleges that "there is a hole in him somewhere." "A little careless of one knee" tells that the horse is knee-sprung, "a little rough on the coronet" that he has a sidebone or ringbone. "Stands a little careless" indicates that the horse points a fore foot.

A brand new one in the trade just now is "he smokes his pipe," which indicates that a horse's lip has been torn at some time and so hangs

down. If a horse has a sloping rump he is "goosey." He is "chancy" if he gives promise of developing into something high-class, but has been purchased for a moderate or low price. When a horse throws his fore feet outward at the finish of the forward step he is said to "wing," "dish" or "paddle," according to the choice of terms. They all mean the same thing. If he toes-out in front he is "nigger-heeled"; if he toes-in he is "pigeon-toed." If he stands with the points of his hocks together and his hind toes out, he is "cow-hocked." If the formation of the foreleg is the reverse of what it is in a knee-sprung horse, he is "calf-kneed" or "stands back at his knees," as opposed to "over at his knees." A horse that toes-out in front will almost invariably "box" or "knock" or hit his knees or "brush" his ankles. If he strikes his hind ankles he "interferes"; striking higher up behind is called "speedy-cutting," but it is done by striking the opposing fore foot. If he strikes the shoe of a front foot with the toe of the hind he "forges" or "over-reaches." If he is off in his wind he is "windy," or "roars" or "whistles." A "bull" is a horse that grunts when a pass is made at him. Incidentally it may be remarked that about 10 per cent of all the horses which reach the Chicago market are windy. If he is afflicted with chorea he is "stringy" or "crampy" or a "shiverer," though he may be "stringy" on account of some

injury and not have chorea. Obviously if he has heaves he is "heavey." If he keeps on swinging from side to side in the stall like an elephant he is a "weaver." If a horse has been knocked about a bit in shipping he will likely show a "car-bruise," but it must be soft and mellow and show to be of recent origin. If a horse has never even seen a harness he is "a little green." It is positively marvelous how diminutive all equine ailments are around the mart. Finally when the horse has passed through the plug, pelter and crowbait stages he becomes "a poor old skin," and when he either can not go any more or dies he is carted off to the "refinery" and is there converted into a large variety of articles of commerce ranging from salt beef (for export) and cordova leather to buttons and glue.

There are also many other terms of much more general significance and acceptation used by horsemen the world over. For instance, a "half-bred" is a horse begotten by a Thoroughbred stallion and may have on his dam's side none of that blood at all or very much of it, but so long as he is not eligible to registration as Thoroughbred he is "half-bred." A grade is begotten by a pure-bred horse from a mare of unknown breeding, but this does not apply to the get of the Thoroughbred or standard-bred. A cross-bred is by a pure-bred horse of one breed from a pure-bred mare of another breed.

The get of a Thoroughbred stallion from a cold-blooded mare is, as stated, a half-bred. The get of a standard-bred stallion from a similar mare is non-standard or trotting-bred or pacing-bred, as the case may be. "Cold blood" is that which has not been vivified by an infusion of the race horse or his derivatives and "warm blood" is that which has. The part of the horse in front of the saddle is called his "forehand." The bone and muscle of his tail form his "dock," and when a part of that structure is cut off he is "docked." Where his dock joins his body is his "croup" or "tailhead." His buttocks are his quarters—never his hips. Between his quarters and hocks are his "second thighs" or "gaskins." His shanks are his "canons" or his "shins." His nose and mouth are his "muzzle." Finally his left side is his near side and his right side his off side. A horseman never speaks of the right or left side of a horse.

Demand for draft geldings of great weight is a development of modern commercial conditions. The congestion of the streets of the great cities and the increase in the bulk and weight of the goods to be hauled preclude speed in transit in urban thoroughfares. Therefore came the call for horses of sufficient weight and strength to move very heavy loads. So great a factor has the big draft horse become in American commerce during the last ten years that if

he should be suddenly extinguished the railroads would be, temporarily at least, forced out of business for lack of power to transport freight from warehouse or factory to the cars. Of still later years the desire of the great mercantile firms to advertise their business by putting good teams of drafters on the streets to make a fine show as well as to haul their heavy loads, and their rivalry to win in the show ring ever since the International Live Stock Exposition was established in Chicago in 1900, has created an insistent and never satisfied demand for these big horses and forced prices skyward to heights little dreamed of in the trade. Consistently year after year the heavy drafter holds his pride of place as the horse commanding the most ready sale at prices relatively higher than are brought by any other sort. A farmer can make a larger profit on his draft horses than on any other kind he can breed.

Weights most favored by purchasers range from 1,800 lb. upward, the limit, so far as I know being, for the International show at least, 2,385 lb., which was the weight of Armour's Big Jim in November, 1906. I have heard of stallions alleged to weigh from 2,400 to 2,500 pounds, and I believe there are a few such in the country, but Big Jim is the largest horse I have ever seen on the scale. Weights of drafters are usually considered to begin at 1,600 pounds, and the greater the weight with

quality and shapeliness the higher the price. It has been stated that better geldings have been shown at the International than there ever were stallions. As to this I need not express an opinion, but the fact remains that some marvelous specimens have been exhibited and the keen rivalry of the great packing firms to obtain the very best always insures a top-notch price for a top-notch animal. Add to this that a score or more of the largest eastern firms are always actively in the market for this best class and it is easily seen what an alluring prospect is spread out before the farmer-breeder by this sort of trade. To get the big money, however, it is necessary always to offer something the buyers want. The farmer who deliberately caters to the needs of the poor teamster who ekes out a more or less scanty living by the labor of his equine slaves need never expect to get the prices which are secured by the breeder who caters to the wants of firms worth millions. Remember this: No matter how high a breeder aims he will always get some misfits. If he aims to breed the very best drafters he will get always a certain proportion of chunks, wagon horses and nondescripts. If he sets out to breed any lower grade, he will get enough poor ones to put a serious crimp in his receipts.

During the dull times which prevailed between 1892 and 1900 most farmers sold off their best mares and went out of the business

of breeding horses. Thousands of these mares were exported and many more thousands were put to work in the cities. In this way when times began to get better and the demand for horses to revive most farmers found themselves, a decade ago, without big mares from which to breed. Therefore when we started in again to raise drafters we had a mighty poor foundation on which to build. Build, however, in some shape we had to, and the man who had stuck to his draft-bred stock found his wealth greatly increased. As it was only in 1899 and 1900 that breeding was seriously entered upon again the supply of big drafters must of necessity be and remain short for many years to come. There is no more profitable line of live stock raising in which the farmer may engage. That we have done as well as we have is very greatly to our credit, but there is yet room for great improvement.

From all of the old world breeds of draft horses now known here the high-priced ones may be bred. The point is, paying due attention to quality which has heretofore been discussed, to breed the largest stallions to the largest mares and then feed the resulting foals from birth to selling age. Weight without quality will always sell, but weight with quality is the combination that brings the big money. The conformation desired has already been described in Chapter II. Generally speaking

stallions weighing 2,000 pounds or more should be used and the mares as large as they can be got. It is a great temptation to sell off good young mares when, for instance, a mortgage payment is coming due and a shipper offers a long price, but it will pay best in the long run to save religiously the best young mares, and use them for breeding stock.

Crossing over from the French breeds to the British and from the British to the French or Belgian will produce commercial drafters that will sell to splendid advantage, but it is always best to stick to the one chosen breed, piling cross upon cross and so continually approaching a fixed ideal. The influence of proper environment has already been so fully dealt with that it is only needful now to say that the drafter is a product of highly artificial conditions and must be highly fed or he will not grow large enough.

Drafters which bring the highest prices are always offered for sale about as fat as they can be made. The buyers who bid the longest prices for drafters invariably want them fat and are willing to pay well for the adipose tissue. Consequently the farmer who lets his grain lie in his bins and offers his horses thin in flesh is merely throwing money away. An instance is in point. Matt Biers, the well known Illinois shipper, recently paid a farmer $265 for a thin four-year-old gelding, which sold at auction in

Chicago for $290. It was current comment at the time that if the gelding had been fat he would have sold for $400 or more. Had the farmer put the extra flesh on the horse he would have been paid probably $350, the shipper would have made a larger profit and the buyer would have been better pleased. According to these figures 40 or 50 bushels of grain fed to this horse would have paid a dollar a bushel and a net profit of $50 besides to the breeder. The men who make a business of "feeding out" drafters know the value of fat. If these professionals can afford to pay from $200 to $250 or even more for thin horses, ship them home, fatten them, ship them back to market, pay commissions and make a profit in the end, surely the farmer can do much better when he can save all the expenses incident to such transactions. Therefore the farmer will make money by seeing to it that his horses are fat when he offers them for sale and this is true not alone of drafters but of all other horses as well.

Finally in order that farmers may get a correct idea of the drafters that bring the big money and of the kind they should strive to produce there is no method of education so good as attendance at the International Live Stock Exposition and other shows at which drafters are exhibited in numbers, and thorough investigation of the everyday demands of the market at any one of the wholesale centers—preferably

Chicago. By following closely the awards of the judges and by asking questions of representative horsemen when he is puzzled, a farmer can acquire valuable information he will never obtain at home. Be not afraid to approach the judge after his work is done. Judges nowadays are generally perfectly willing to impart on request such knowledge as they possess. Get out and see for yourself. Rub shoulders with the world. Money spent on making trips to great shows and markets need not be charged up to expenses, but with all legitimacy to capital account and the investment will produce a thousand fold greater interest than the money would earn if never spent at all.

CHAPTER VIII.

FITTING FOR SHOW AND SHOWING.

From time immemorial trial in the arena has been the main bulwark of the breeder's business. The modern show ring is the legitimate successor of the Roman stadium. It was an easy transition from the trial of speed to the trial of individuality and this historic connection is portrayed today in the names amphitheater and coliseum which we bestow on the buildings in which our horse shows are held. At its inception in those far off days the arena was a field of war; the modern show ring is no kindergarten. It is the same invincible spirit which made Rome mistress of the world and which has builded all the great empires the world has ever known that has given men honor in the show ring. Modern show yard ethics demand that the exhibitor be a sportsman; the show ring is no place for the pusillanimous or cowardly.

Active competition in the arena must be engaged in by the breeder before he can learn to gauge properly the merits and demerits of his stock. Young animals may look at home to be worldbeaters and yet not come one-two-six when the judge hands out the ribbons. It is

only by submitting them to the show ring test that the breeder may discover how they rank with the products of other establishments. "Who's afraid?" should be his motto. He should court the trial of the show ring and cut and come again until he lands on top. There may be breeders who have ridden to fame along a road that did not lead across the tan-bark, but if there are history does not record their names. Gen. Sherman's epigrammatic definition of war has been accepted by the world at large as correct. The show ring is the seat of war, mimic it is true, but war nevertheless, and the showman's campaign must be no less carefully planned and vigorously prosecuted than the famous march to the sea.

In North America the practice of exhibitors differs materially from that of the old world. Commercialism dominates all modern American life; the business element is always easy of discovery. The United States and Canada are the only countries in the world in which many of the leading prizes are won by horses imported from beyond the seas and shown by exhibitors whose chief object in trying to win honors is to make money. This is not true, of course, of a few of the rich men who show horses as a pastime, but these few often work the hardest to win and it is on the basis announced that show yard methods, ethics, procedure and preparation must be discussed. It

is this commercial element which has made rivalry in the American arena the most bitter in the world and supplies the reason why it is so essential that preparation be complete before sending horses onto the tanbark.

In the old countries show ring competition is more or less of a lovefeast compared to the battles fought on American soil. Annually the United Kingdom, France, Belgium and Germany are ransacked by the importers for the best horses that money will buy and to win with these horses is a matter of dollars and cents, not of sentiment. That our breeders have done as well as they have in the face of this free-for-all competition speaks volumes for their progressive enterprize in the face of discouragement. We are a free-for-all nation, however, and the breeder must win against such competition if he is to gain the top rungs of the ladder. It has been done and it can be done again. There are anomalies in national as well as personal affairs and the position of the American breeder is a notable one. If he wins he wins against long odds and when he wins his triumph is all the more glorious. True parallels can not be drawn between the show yards of Europe and America.

Friendship ceases when the horses enter the arena. It is then the business of the exhibitor to win and even a small point overlooked may

mean defeat. Thin horses can not win. Poorly shown horses meet defeat. Fierce rivalry commands that the judges consider naught but that which is presented before them. Therefore the first essential is to put the show horses onto the tanbark as fit as hands can make them and to that condition an overload of flesh is the prime essential. Flesh covers a multitude of faults. It would serve no good purpose to discuss the question of so overloading show horses; the fact remains that it must be done.

Nor must the exhibitor think that all he has to do is to put his horses into the ring good and fit and the ribbons will come of themselves. Ethically they should; actually they will not. Of late years there has been a marked advance in the personnel and work of the judges, but there are practical politics in the show ring just as there are in everyday life. It is a highly specialized type of politics at that and as in all political strife no one can afford to overlook even a single trivial point. An exhibitor to get quite all that is coming to him must not only get up into the "push" but he must be of the "push." He can only get there by showing his stuff with just that extra touch of finish that compels recognition and the while remaining content to persevere in his novitiate as a good sportsman should. There is nothing Utopian or altruistic about the American show ring. A novice at the game must fight for what he gets

and, remembering what Sherman said about war, fight accordingly. If he does not watch out he will find the cards stacked against him and dealt to him from the top, middle and bottom of the deck. At that, more than half the cry of fraud and favoritism in the show ring which has gone up from disappointed exhibitors has lacked justification in fact. The really neat jobs have slid through so beautifully that they have hardly ever been even suspected, certainly not detected until long after they were put through. All of which nails down the unalterable fact that the exhibitor must watch out or the goblins will get him.

Fitting horses for show is an easy enough process, albeit one that is fraught with much likelihood of trouble if it is not properly done. The hard part of it all is to pick out the winner in the rough. The better the judge the more surely will he select a thin colt to make a winner when fitted, but the best will go wrong half the time or more. A breeder who lets his young stock get down poor has all these chances to take. He would better keep them in condition and so know more about them. There is no reason why a breeder should not show his horses from foalhood to maturity. The cumulative influence of such success is priceless. Foals and yearlings should be the main reliance of the breeder in the show ring, rather than his matured stallions. Therefore we begin with the

foals. A group of them, uniform in character and brought out as they should be, forms the very best advertisement for any breeder and next comes a good bunch of yearlings. In these classes he does not meet the competition of the importers. He practically has the field to himself. He is overlooking a sure thing if he does not avail himself of the opportunity.

As there is no age limit in the classes for foals youngsters intended for exhibition should come early and be submitted to the forcing process from the time they are born. Foals are more easily fitted than any older horses. They should have all they will eat of oatmeal and bran and after they are ten weeks old or thereabouts some oilmeal. It is impossible to give any direct instructions as to quantity. The feeder must arrange about that according to the condition of the foals. The mares should be fed a large ration of grain and have good grass. It never pays to stint the mares that are suckling foals intended for exhibition. A ration consisting of ground oats one part, ground corn one part and bran two parts by weight, and a double handful of oilmeal fed dry will prove the best. They should have as much of his as they will eat up clean twice a day; it promotes the flow of milk and the foals prosper accordingly. This is high feeding of course, but it must be done in order to get the foals where they should be. With this sort of milk from their dams and what

grain the foals will eat there need be no worry about their growth, but if it is intended to send them into the ring in the very highest possible condition cow's milk may also be fed to them. Nothing puts flesh so nicely on a young animal as milk. The charge that cow's milk makes foals have soft joints is apparently made good at times, but then it is the abuse of the milk not its use that is to blame—the milk of itself never yet did any harm; it is the mountain of flesh that can be built up by the use of the milk that influences the joints and makes them soft.

I believe that just as hard joints can be built up on milk as on anything else. In fact it can be proved that this is true, but it is for the feeder to determine how much must be given and to see that it is not abused. Moreover there are always chances to take in fitting any kind of horses for show. I have known colts that were allowed to bury their noses in warm new milk and drink all they wanted three times a day and come out all right every way and I have known others that threatened to go wrong on a ration limited to two quarts twice a day. Begin any time it is desired to feed the milk after the colt has got so it is able to take all the milk his dam gives. Go easy at the start. Feed three times a day and never give the youngster all he will drink. Perhaps two quarts three times a day warm from the cow will be about right, though it may be too much. It will

always be enough. If the feeder does not understand his business thoroughly or if the inexperienced man is not willing to take a chance while learning the feeding of cow's milk to foals the process would better be eliminated altogether.

According to modern show ring ideals foals of the draft breeds look better docked. They must also be taught to lead nicely and stand themselves up properly in the show ring. An unmannerly foal is at a grave disadvantage. Educate them to walk and trot freely to halter and to stand still when wanted. To this end wean the foals early. Then they will not worry for their mothers, but the worst thing possible—I have seen it done—is to begin the weaning process just before leaving for the shows, either taking the dam along and leaving the foal or vice versa. That will never do, no matter how well done to the foal has been nor yet how old he is. The mare will go wrong somehow and the foal will never look as he should either at home or at the show. Trim the feet of the foals so as to keep them level. Get them to look as nearly like little horses as possible—the more so the better. If they are to be shown with their sire at their head, trim the lot just alike.

Coach-bred foals should not be fed milk—it will make them too gross—unless one happens to be very backward and then he may be made to catch up to the others by the added food. With this single exception their treatment

should be the same as that for any other foal intended for exhibition. Thorough education is even more essential in the case of coach and Hackney foals than with the drafters, but only insofar as with the mature animals of these sorts.

Foals fed for showing as described will only need a let up in dropping off the milk when the show season has drawn to its close, which under the present system is in December and therefore in cold weather. After they are safely home the milk may be tapered off and stopped altogether and the straight grain ration persevered with, raw or cooked roots being added. Carrots, sugar beets or rutabagas should be fed in quantity preferably raw. The grain ration should be oats and bran. It is impossible to say definitely how much the colts should have. They should be given a big yard to exercise in and they should have as much oats and bran as they will eat up clean and come hungry to the next meal. This with the roots and what bright hay they will pick over will keep them growing nicely and as they should grow. Formerly I believed that it was necessary to feed weanlings soft food all winter. I am now convinced—and the bulletins of the experiment stations will bear me out—that more may be done in promoting growth of the right sort by feeding grain dry and by giving roots for succulence. Digestive troubles, moreover,

are less likely to arise to be overcome in colts that are dry-fed and it has been most conclusively proved that cooking adds nothing to the nutritive quality of the grain.

Carried along in this way weanlings will come to the rise of grass as yearlings about as growthy as they can be made, fat and hearty. It is always better to separate the colts from the fillies during the winter. They should be accustomed to the green herbage gradually and then they should have the run of pasture, the grain feeding being continued. They should have shedding to run into at will and as they grow older they will, of course, require more grain. In the heat of summer the youngsters should be taken up during the day and turned out at night and they should have steady education in moving according to show yard methods. The fillies will do well in almost any sort of a field. The colts, being of a more excitable nature, will be better in small lots of two or three acres and not more than two colts together.

As the time of showing approaches again, perhaps about a month before the first show is to be made, take them off the pasture altogether so they will stand shipping. Early roots are most welcome at this time. If the youngsters are brought up in this way they will be as fit as they should be by the time the car is in the siding and the order to march is given. After

the yearling shows have been made the process of wintering is much the same as before. The youngsters need about all the grain they will eat under any circumstances and the feeder can alone determine what their rations should be.

Two-year-old colts brought to their second season this way should have box stalls and paddocks attached, each colt a stall and a paddock to himself. I have seen valuable colts run in bunches as two-year-olds, but it is a poor practice. They wrestle and fight and the liability to accident and consequent blemish is great. Of course if it is desired to run the colts along on little or no grain perhaps they will get along nicely enough together in large lots, but I do not think that is the way to rear pure-bred colts. Keep the youngsters schooled in the ways of the arena.

This is as good a place to say it as any other: It is impossible to explain didactically the art of feeding young horses for show purposes. It is an art and one that may be learned only by experience. It would be foolish to try to set down any positive rules for the feeding of young horses intended for the show ring. They will stand a lot of feeding and they must have it, but as every horse is different in some particular from the next one only a very general foundation can be laid down. On this the feeder must build for himself, but he must build with

the knowledge that he can kill one with that which will not be half enough for the next.

With the colts thirty months old or thereabouts and the show season over they will be practically mature. They will grow some more, to be sure, but it will be little in comparison to what they have done in the days through which we have followed them. Exercising now becomes a most important factor, though many people think a colt coming three years old will do very well if given a yard in which to run during cold weather. A show colt, and it does not matter how good he is, should now be broken and made to work as I have already described. Then comes his season as a three-year-old and more work. If the colt is moderately worked and in full round flesh at July 1, say 60 days before the shows open, these 60 days will be ample to put on the extra flesh he must have to win. It is unnecessary to have him right on razor edge when you first take him away from home. The same amount of grain and less work will put on all the needed flesh and his legs will stay right, while he will feel so much better than an idle colt that there will be no comparison between them in the ring. Never forget the lessons that make for handlines in the show ring at the halter. During the month that comes just before he goes away from home let him have these lessons daily. If he is suddenly,

for any cause, forced into absolute idleness, cut off the grain altogether.

There is no reason why stallions should not be given their exercise in the harness and yet be sent into the ring ready to the minute. The crack geldings of Armour, Morris, Swift or Pabst got their work in the leather—not much it is true, but enough to make and keep them handy—and I have never seen stallions shown in better fettle. We need more strength and virility in our stallions. I know that the advocacy of such methods of fitting for show will sound strange to many of the old school in which I was brought up, but I can not close my eyes to the accomplished facts presented to my view. When I have seen the Armour and other geldings sweeping around the arena at all gaits from the stately walk to the keen run for an hour at a time—a feat that none of the stallions shown could accomplish—and each individual gelding in as high flesh as any of the entires fitted without work, I have learned that the best way to prepare horses for the arena is not in idleness but in the harness. I know that it would be practically impossible for the importers to fit all their stallions as suggested, but that does not lessen the force of my contention that it would be vastly better for the horses themselves and for the men who buy them if they would. I do not wish to be understood as saying that the great geldings are made ready for showing

on full work, nor yet that all stallions could so be made ready, but some of them can be made ready on work enough to make it pay to work them and others on tasks so little lessened that the difference would be negligible. In any case it is so much easier for a man to sit upon a box and drive that the horses would always get work enough to preserve that healthful vigor which is so essential to the propagation of the race in its best estate.

However it often happens that a thin horse is to be put in condition for the show ring and the owner will not consider putting him to work. The period of time which must intervene between the day on which he is taken up and the day on which he will have to be sent into the ring will have of course a material bearing on the manner of feeding, and there is something also in the number of chances an owner is willing to take. Likewise there is much in the individual. I have known horses take a whole year to get ready and then lose their show condition in a week. There are some hard wooden beasts that will never feed into show shape. On the other hand there are some horses that it is hard to keep out of show shape—in idleness. It is, however, safe to say that on any reasonably big-framed horse from two years old upward 500 pounds may be put on in six months if he is so thin to start with that his ribs may be distinguished. When a horse is idle he may be

fed a great variety of food and suffer no ill consequences and the variation of the grain will coax him to eat with greater relish. I do not advocate this kind of feeding. I will describe the methods in vogue some years ago by a firm whose fame is worldwide, whose prize-winning record placed it clearly in the forefront among its contemporaries and whose losses by death from colic and kindred troubles were enormous.

In the morning about five the horses were given crushed oats and bran, fed dampened with cut hay—enough to fill a common stable bucket. At ten in the forenoon they got whole oats, bran and cut hay. At two in the afternoon they got the same feed as in the early morning and around six in the evening they got boiled barley, crushed oats, ground corn, oilmeal and cut hay, and usually some roots boiled with the barley. The feeder was a man of great experience and highly competent in every way. I should judge that the horse got from 16 to 20 pounds of grain and bran each day and only very moderate exercise. Often as the time of showing approached this feeding was supplemented by the traditional drink at nine o'clock at night. This consisted of the jelly made from perhaps a pint of oilmeal, a couple of pounds of oatmeal, half a pound of molasses and water or milk to make something more than half a bucketful. With all this the individual caretakers would oftentimes feed extra grain

between meals. This is high feeding properly so called. Any one who wishes to take his chances of colic, founder, inflammation of the bowels and the like with it may do so. The stomach and intestines of horses so fed are so soft that you can stick your fingers through them anywhere and not half try. Any one who wants to build a horse up for show in this way may do it.

The prudent showman maps out his plan of campaign, studies out his best routes, hires his car for the show season and ships out in time so that he will arrive at his destination a couple of days before the show opens. It is best to rent a palace car for a stated number of weeks or months. If it is not desired to go to this expense—though it always pays—then a box car (or more) must be fitted with stalls made of strong lumber, just as they might be built in a barn. Three horses may often be put in one end of the car, but if mature stallions are being taken along two will be enough, which means that one partition must be built, and it is hardly needful to say that it should be built so that nothing short of an ax will knock it down. Horses will only ride well in a box car either head to or tail to the motion. Arrangements having been made with the railway officials for the use of the same car during the entire season the lumber used may be knocked away and saved when the return journey is made and the

horses are once more safely on the home landing platform.

In getting to and from landing chutes and unloading platforms at fair grounds the shipper will acquire a varied assortment of experience. Horses do not need much feed in transit—only about enough to keep them quiet. A barrel should be taken along for water and filled periodically in transit. It pays to get horses off the car as soon as possible after they stop rolling. When standing still they soon begin to fret. At junction, division and terminal points the yardmasters will be found to be human and therefore appreciative of common decency and civility and occasionally, in my experience, amenable to other influences. It pays to be a good fellow in the show business.

Make entries in proper season and give full details. Never let the suspicion that you have a "ringer" with you get abroad. Ask as few favors of the show management as possible and as a general thing put up with inconvenience to the point of imposition rather than raise a row. It pays. It pays also to do whatever the management asks in the way of getting horses into the ring, parading and so forth. Give the people a show whenever you can. As the advertising is all that any exhibitor gets directly for his labor, his stalls should be tastefully decorated, the placards showing forth in large plain letters whose horses are being

shown, and civil replies should be returned to all visitors. There is another thing that pays: have a pleasant word for everyone. No one ever can tell by the looks of a man whether he is a prospective purchaser or not. I have seen thousand-dollar bills fished out of vests that were not worth three dimes.

True sportsmanship demands that the exhibitor take victory or defeat philosophically. The man who is blatant in success and lugubrious in defeat bumps against trouble sooner or later. An exhibitor should act like a man, not like a spoiled child who does not want to play in any one else's yard unless the game goes his way. The show yard is no child's playground. There is only one way to learn its ropes, which is to get into the game and play it for all it is worth. Just how to play it each must learn for himself. No amount of precept will serve to portray its inner workings. But it may be said in conclusion that a man must have the goods to win and he must play his cards aright. He may have the goods and he may not get all that is coming to him. However when he has the goods and stays awake he will generally find out where to go and what to do.

PART II.

THE BREEDS.

"What is a breed?" Many different replies are made to this question. We talk glibly about this breed and that breed; of breed character and breed type, but when it comes to putting an accepted but not conceived definition into cold type it is altogether a different matter. Darwin and other distinguished men of science have told us from time to time what a breed is as opposed to a species or variety or sub-variety, but I question very much if any definition yet given quite fills the bill. Webster gives among others these definitions of the word: "A race or progeny from the same parents or stock; as, a new breed of sheep." "A cast, a race or kind of men or other animals which have an alliance by nativity or some distinctive qualities in common," and the phrase used as illustration is "Greyhounds of the best breed." The first may be let go for what it is worth. The second falls far short in that the animals in a breed need not necessarily have a common parent or even a common line of descent and the mere possession of "some distinctive qualities in common" will not by any means make a breed.

So far as our modern breeds are concerned they are all composite in origin and there der-

ivation may therefore be passed up without farther consideration. In any case it is implied in the following which is presented as the correct definition of the term under consideration:

A breed is a group of animals possessing homologus character by inheritance so firmly fixed as to be transmitted with reasonable certainty under suitable environment.

Place fifty well bred Jersey cows in a row, fifty West Highland bulls, fifty Clydesdale horses and fifty Angus bulls. Now screen from view all of the Jersey cows and the Highland bulls but their heads; all of the Clydesdale horses but their legs from the knees and hocks downward, and all of the Angus bulls but the hind quarters, and a correct idea of homologous character may be obtained. It is the sum of these homologues in each instance that goes to make up what we briefly refer to nowadays as breed type or character. In just so far as this test is met by the entire membership of a breed it may be counted on to reproduce with reasonable certainty the homologous character which it possesses. Vice versa in just so far as a breed will not meet this test it will fail. In following out this thought we may readily learn how indefinite have been the aims of many breeders—even to the inevitable conclusion that in some of our most celebrated breeds, taken in a mass, real homologous character is not present.

It must be understood that reference is made

to the breed as a whole first of all, then to such selected representatives as we call show stock. When the latter do not present an adequate amount of homologous character, so much the worse. A breed must be judged in its entirety, not by a few fine specimens which may rise in sparkling fashion over the dead mediocrity of the great mass. The touch of the masterhand is in evidence always, but it not infrequently happens that the best horse in a ring does not really typify the breed to which he is alleged to belong.

At the risk of being called tedious I desire to emphasize the fact that it is the sum of the homologous characters which constitutes breed type and the animal which embodies in itself the most of these characters in their highest estate is the animal which must be adjudged the best according to the standard of the breed involved. It is along these broad lines that the various breeds are described in future chapters.

Stud book registration and maintenance of breed purity must always go hand in hand. Errors of omission and commission will creep into stud books and in itself registration is worth little unless it certifies to a line of descent from ancestors of high class, but it may be accepted without question that in this modern age it would be impossible to maintain the purity of any breed without a well managed stud book. Popularly too much weight is ac-

corded to the numbers following the name of a horse. The word "registered" is one to conjure with and it has been made a scapegoat to bear away into the wilderness of credulity a vast load of inferiority.

Too many are willing to believe that because a horse is registered in some stud book he must be a good one. This easy credulity has led to the establishment of bogus books of record in which registration implies absolutely nothing, but that the certificate has been granted and the recording fee paid. Ignorance of the real value of record and of the names of the stud books in which registration really means something has caused many a man to pay his money for a grade in the belief that he was buying a pure-bred. In the appendix to this volume will be found a list of all the stud books recognized by the United States Department of Agriculture at the date of publication. It will be seen that the list is a long one and it has grown to its present proportions practically within the past thirty years.

In this connection it is but just that fitting recognition be extended to the late J. H. Sanders, founder of The Breeder's Gazette, for the splendid part he played in promoting the establishment of many of the stud books now so widely known. I am within the mark in stating that we have never had a man so widely versed in horse lore as he was in his time. I

am also within the mark in stating that he was actively connected with the foundation of almost every stud book of standing in which the farmers of America are interested today. By his unfailing perception and his indomitable energy he brought order out of chaos in a time when there were no trails blazed for him to follow. He was a practical breeder and a thoroughgoing encyclopedia in matters pertaining to the horse. Not only did he render an incalculably great service in advocating and aiding the establishment of the stud books in which the farmers are most generally interested, but when Kentucky revolted against the close rule of the arbitrary Wallace, Mr. Sanders was selected to compile the new stud book, which he did in a manner reflecting his most intimate knowledge of the American harness race horse and its origin.

I desire also to pay my personal tribute to his memory. No man in agricultural America has left behind him so great a monument. Go wherever a furrow is turned in American soil and there the fruit of his works is made manifest. Egypt's pyramids will in time turn to dust, but the monument James Harvey Sanders builded will gather bulk and strength and beauty as time rolls on. In the gleam of the golden grain in bin and crib; in the show yard and in the stock yard are blazoned the praises which are his by right. Progressive always, ag-

gressive when occasion required, a master of detail as well as a man of affairs, the world is vastly better for the touch of his vanished hand.

THE DRAFT BREEDS.

History contains no record of any large breed of horses having been developed on high ground. Omitting detail it was not until the horse in his westward migration reached the low-lying marshy lands of northern Europe that he began to gather the bulk and strength which have made for the present-day drafter. It is also immaterial where the first real drafters were developed. That development was probably simultaneous athwart a considerable stretch of country. Still we may accept that part of Belgium and Holland erstwhile denominated Flanders as the fountainhead from which flowed the stream which has given us the true draft horse. From the parent stock there obtained the various heavy breeds as we know them today have been evolved according to the desires of the various peoples which have developed them. As there was no native American heavy horse he had to be imported and as the importing business has grown and ramified we may divide the draft breeds into three groups —the French, the British and the Belgian.

THE FRENCH GROUP.

In France the government recognizes two pure draft breeds—the Percheron and the Bou-

A MULASSIERE STALLION
Photo taken at Paris Show, 1907

lonnais. Other breeds recognized at the shows but not claimed to be pure are the Nivernais, the Bretonnais and the Ardennais, and there are also prizes offered for a nondescript lot called Mulassiere, which means "mule-bearing," and the design is to encourage the production of loosely built mares well suited to mate with the asses of Poitou. The Mulassiere, however, may be dismissed from consideration.

On their first introduction to the United States the draft horses of France were all included within the common title of "Norman." There was none but the Norman horse imported from France, but some twenty years later a disposition to call them Percherons appeared on the part of those who believed the horses of La Perche were the most representative and most clearly entitled to be called the typical Gallic drafter. A bitter struggle was precipitated between those who favored the retention of the general title Norman and those who insisted upon specialization under the title Percheron. A compromise was effected and the first volume of the Percheron-Norman Stud Book was published, the elder Sanders being the editor.

Peace, however, did not reign long. The Percheron contingent appeared to be gaining the upper hand and the supporters of the Norman nomenclature broke away, formed an association for themselves and began the publication of the National Register of Norman Horses. It

should be clearly understood that in calling their horses Normans these importers and breeders did not desire to imply that the animals all came from Normandy, but rather that Norman was a generic title which included all the draft breeds of France, and as these breeds were about one and the same thing they were all equally entitled to registration. On the other hand, the Percheron contingent, insisting that the Percheron was the typical drafter of France, dropped the Norman from the name of the breed and continued the publication of the Percheron Stud Book. The present National Register of French Draft Horses is the lineal successor of the National Register of Norman Horses and the Percheron Stud Book of America has come to the association presently controlling it from the beginning made under the late J. H. Sanders, as already detailed.

In the French Draft book are registered all imported stallions and mares which are recorded in the General Draft Horse Stud Book of France. In the Percheron Stud Book only pure-bred Percherons may be registered. This is to say that Percherons may be registered as French Drafters if the owner so desires, while horses of the Percheron breed only may be recorded as Percherons. In this way the effort at specialization initiated along back in the middle seventies has been achieved. As bearing somewhat on this matter of registration of all

French draft horses in the National Register, it may again be pointed out that the Percheron and the Boulonnais are the only draft breeds recognized by the French Government as pure. The Ardennais are being improved mostly by the use of heavy Belgian stallions and are recorded in the Belgian Draft Stud Book. The Nivernais are being improved by the use of Percheron stallions and the Bretonnais are a mixture of everything under the sun. It is perfectly true that it is impossible invariably to pick out pure-bred Percherons from horses of mixed French Draft breeding, but on the other hand it is not infrequently possible to do so. I desire no controversy in this matter. These are the facts. It only remains to say that whatever the merits of the dispute originally were a colt or filly will sell for more money if it is eligible to record in the Percheron books than if it is only eligible to record in the French Draft book.

Much misapprehension exists in this country, and indubitably much misrepresentation has been resorted to, in connection with the brands often found under the names of horses imported from France. Under the French law stallions are "approved," which carries with it a subsidy of money from the government; "authorized" which carries no subsidy, and "certified." There are only two maladies for possession of which approval, authorization or certification is

refused in France—periodic ophthalmia, or moonblindness, and thick wind. The French names for these unsoundnesses are "fluxion periodique" and "cornage."

Stallions are not permitted to serve mares owned by others than their proprietors unless they have been examined and certified as free from these troubles by a board of veterinarians appointed by the government. Any one who stands for public service a stallion that has not been approved, authorized or certified is liable to fine, and the owners of mares using such a horse may also be prosecuted and punished. There is nothing in the law to prevent a breeder using any sort of an unsound stallion to his own mares. When a stallion has been examined and pronounced free from the unsoundnesses named he is branded on the neck under the mane with a five-pointed star. When certification is withheld on account of the horse failing to pass the veterinary ordeal he is branded under the mane with the letter R, which stands for the French word "refusé"—refused. The five-pointed star and the letter R are the only brands placed on horses by the French government. In France draft colts cannot stand for public service until they are over thirty months of age.

Certification of freedom from moonblindness and thick wind is granted for one year only. Each stallion designed for public service

must be submitted for examination annually, and in the event that a horse should fail to pass, after having in previous seasons gone through all right, the letter R is branded over the five-pointed star.

Horses and mares registered by the French Percheron Society (Societé Hippique Percheronne) are branded on the neck beneath the mane with a brand which looks something like the American dollar mark. This brand is a combination of the letters S and P—standing for Societé Percheronne. These three brands—the five-pointed star, the letter R and the combination of the letters SP are the only official marks placed on horses originating in France.

Exception may be made to this in the case of the Nivernais stallions, which have their stud book numbers branded on their necks, but this would seem to be a different matter altogether in that a collection of numerals cannot be readily mistaken for a single simple mark.

There is, however, nothing in the French law to prevent any breeder or importer branding his horses how and where he pleases. I am not aware that any French breeder does so brand his horses, but I understand that at least one prominent American importer marks his purchases with the hot iron. There need, however, be no mistake made, if it be kept in mind that the brands of the government are but two in number, indicating acceptance or rejection—the five-pointed star and the letter R.

THE PERCHERON.

Undoubtedly the Percheron breed flows from the same general fountain head in Flanders as the rest of the draft breeds. The currently accepted belief is that on the defeat of the Saracenic host by Charles Martel in 732 the eastern stallions of the invading host were crossed with the larger horses of the low countries and the formation of the Percheron laid in that manner. Continued infusions of Arabian and Andalusian blood seem to have been poured into the strain, authentic information to this effect being available. It is not strange then that 75 or 80 years ago we find that the Percheron was a diligence or bus horse, weighing from 1,200 to 1,400 lbs., according to the official statement. The increase in size during the past three-quarters of a century to the present scale is traceable, as in all other breeds, to the demands of modern civilization and in part also to the insistent demand of American importers for ton horses.

It is probably beyond question that French horses of draft blood were imported into Canada about the beginning of the nineteenth century, probably earlier, but the first authentic history we have of an imported horse making a great mark in the stud is of the McNitt horse or European, landed at Montreal about the year 1816. There is some dispute about the weight of this stallion. He was a gray and as he was a fast trotter, and begot Alexander's Norman,

A PERCHERON TYPE—IMPORTED

which founded an unimportant strain of trotters, it is unlikely that he was at all large. It is history also that Alexander's Norman was never intended to be used as a getter of trotters. He was more or less of the draft type, as draft type went in these far back days, and it cannot be said that his blood has been of material benefit to the trotter as a breed.

Percherons were imported into New Jersey in 1839 and later, but it was with the importation in 1851 of Louis Napoleon into Union County, Ohio, by Charles Fullington and Erastus Martin that the importation and breeding of Percheron horses into this country really had its inception as a business. This celebrated stallion, Louis Napoleon, weighed about 1,600 lbs. at his best, and after his purchase by the Dillons and removal to McLean county, Illinois, began the movement which has placed the Prairie State in the very front rank among the commonwealths in which draft horses are produced. From the time of Louis Napoleon the development of the Percheron breeding industry has been easy and rapid. Matters of recent occurrence need not be detailed here.

From the very first the Percheron has been the favorite drafter of the American people. There are probably three times as many Percherons in the country today as there are of any other one draft breed. The technical charges which have been made against the Percheron

are chiefly that his bone is light, his pasterns short and his rump sloping. The popular verdict is that whatever the size of his bone or the length or angle of his pasterns, his grades last longer on the streets of the cities than those of any other breed. Right or wrong, the American people have declared in favor of the draft horse which can get up and go, and gauging the matter from the demands of the market, the Percheron best fills this and all other bills. Another point in their favor is the gray color. While all colors are to be found in the breed, grays were for half a century or more the most popular. Then came a craze for blacks; but there never was any good reason for this, seeing that black is the least popular color in the market-place. The breed in this country has, however, staid quite largely gray—fortunately—and the gray stallion is now coming back into his own. Dealers tell me that they will pay as high sometimes as $20 in the hundred for gray geldings more than they will pay for other colors, which supplies a cogent reason why farmers should strive to breed grays. Though a little more than half a century ago the Percheron was not a large horse there has never been any trouble about the size of his get. Today they are as large as any that reach the sales ring, and they always have been.

The Percheron has been greatly aided no doubt in its upward course by numbering among its supporters many of the monumental charac-

A PERCHERON TYPE—BRED ON THE WESTERN RANGE

ters in the American horse business. At that sufficient time has elapsed since the importing business began for the breed to find its proper level. That it enjoys its present popularity must be attributed solely to its suitability to the needs and desires of the American people.

Typically the Percheron is a horse of some range, not squatty or chunky. He has a top line which differs from that of most other breeds in that correctly it is somewhat higher just back of the coupling and between the points of the hip-bones. This, of course, accentuates any lowness of the back or droop of the quarters that may be present. He has good width, his ribs well sprung out from the back bone and rounded like a barrel, but his quarters should not be bagged out like the hams of a Poland-China hog. Instead they should have a flowing rounded contour indicative of promptitude of movement as well as strength. The neck should be well arched, not coarse, and well set up, topped off with a head that appears rather small for the size of the horse. Short stubby necks and heavy sour heads are not typical of the breed. The bone often appears light, judged by the standard of some other breeds, but it is of the stuff that wears, as has been proved on the streets. The pasterns are not long. Coupled with this sort of conformation there is in the typical Percheron a breezy gaity of motion and an air of elegance characteristic of no other breed.

THE OTHER FRENCH BREEDS.

Recognized by the French government as a pure breed the Boulonnais has its home in the neighborhood of the town of Boulogne, which is situated on the northern coast of France and just across the English channel from Britain. While partaking quite largely of the type of French draft horse exemplified by the Percheron, it is undoubted, from the evidence of our eyes, either that some English blood has been injected into the race or that the conditions on the two sides of the narrow channel of salt water have tended toward the production of similar characteristics in the French and British stocks. White markings and colors in which the foxy red is more or less prominent are much more common among the Boulonnais than among the Percherons. Iron grays and roans are common, bays, browns and chestnuts, also, together with white stockings behind and white blazes. The Boulonnais probably averages larger than the Percheron, shows a great amount of bone but possesses less breed character or type.

Nivernais horses are pre-eminently like the Percheron, which is not to be wondered at, seeing that the race is being improved by the use of Percheron stallions. The color is black and all black. In a catalogue of the Great Central Show of Paris now at my hand, black Nivernais horses and mares alone are listed. A rather short back rib, light flank, and a tendency to undue length

TYPE OF THE BRETONNAIS DRAFTER

AN ARDENNAIS TYPE

of back are alleged to be undesirable characteristics of this strain so far as it has been developed, but I am free to say that the few specimens I have seen in this country could not be faulted greatly, if at all, in this way.

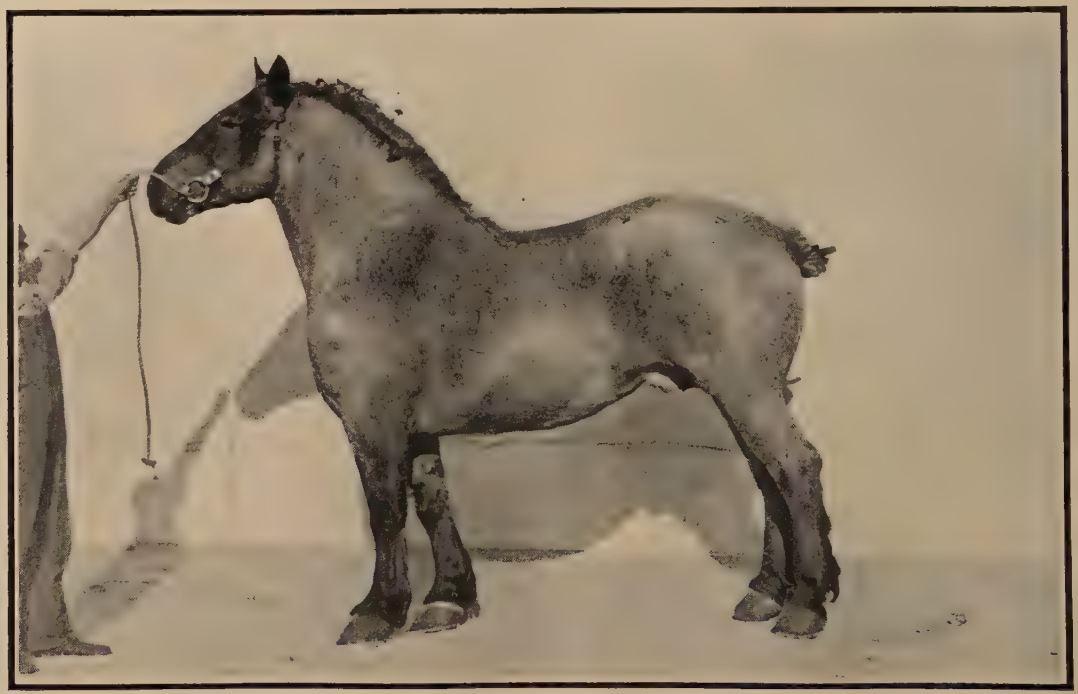
In Brittany betterment of the horse stock was long delayed and the French government has done its utmost to promote improvement in conformation and value by acquiescing in the use of almost any kind of a pure-bred draft stallion. The show catalogue referred to discloses that the Bretonnais horses are mixtures of Percheron, Boulonnais and other sorts with the native Breton stock in all sorts of combinations, and the variegated color scheme of the breed indicates that no attempt has been made at uniformity in this direction.

Ardennais horses are not heavy except in so far as they have been made so of later years by the use of Belgian draft stallions. Properly speaking the Ardennais is a horse of the heavy artillery type and was pointedly eulogized by Napoleon for the endurance displayed in his disastrous Russian campaign. Of later years, however, much size has been injected into the breed and many Ardennais horses have come to this country as Belgians. The Ardennes country, in which they are bred, is a hilly, poor region, in which size can only be maintained by the closest artificial selection and high feeding. It borders both France and Belgium and the Grand-

duchy of Luxembourg, and its horses are typically harder in their legs than the true Belgians bred on lower ground. They run more to white markings than the true Belgians, and more to "hard colors"—bright bays and chestnuts. An Ardennais horse may perhaps best be described as a Belgian draft horse with a bit of Clydesdale quality of legs and levelness of top injected into him. They are recorded in the Belgian Draft Horse Stud Book, and come to this country with certificates therefrom.

THE BELGIAN.

Bred nearest the fountainhead of all our draft breeds and amid surroundings which favor grossness in horseflesh, the Belgian is indubitably the largest heavy draft horse of the present day. The Belgian government has spent a lot of money trying by inspection and subsidy, largely after the French pattern, to improve the breed and it has succeeded in large measure. I remember Belgian work horses that were imported into Scotland to do contracting work some thirty years ago or more, and a worse lot could hardly be imagined. They had the crookedest toplines of any horses I have ever seen, short necks, big sour heads and sickle hocks. These, however, could not fairly be esteemed high-class specimens, for the reason that with freight charges by sea and land they could be laid down in the Scottish capital and other cities for less money



A BELGIAN TYPE

than English or Scotch cart horses of equal size and strength would cost. However, it is well known that until the government seriously took up the business of ameliorating the breed, the faults named were very general among the draft horses of Belgium.

Comparing the stallions and mares of the breed to be seen in America today with those horses of my earlier recollections, a great work of improvement has been done, but there is still a marked lack of levelness of conformation in the breed as a whole, though the type is plainly enough fixed. The short neck and the heavy head are all too often in evidence, but are yielding to the efforts of the breeders to correct these faults. Increasing straightness of topline is visible, but the drooping rump is still a breed characteristic. Of very short legs, with plenty of bone and with a body of enormous width and most excellent action at the trot, the Belgian has proved very valuable in this country to mate with loosely coupled, gangling mares and has probably done better with that sort than any other breed.

Reared on low land, eminently suitable for the production of gross horses, the Belgian has little to do from foalhood upward but to eat and grow. He is for the most part reared on soft feed and green grass and in the constant companionship of man, so that he is the most docile horse on earth in addition to being the largest.

It is undoubted that in this country he is the most easily kept stallion, makes the least fuss and gives the least trouble. He has not, however, had due credit for all he has done. Bred for the most part to mares of Percheron blood the best of his grades have gone into the auction ring as Percherons or "Normans," and it is only occasionally that full credit is given. This may or may not have been unfortunate of course, but geldings of undoubted Belgian type are now to be seen on the city streets and once in a while in the show ring. This shows that while the Belgian, the importation of which in anything like large numbers is of comparatively recent beginning, has made a place for himself in our equine economy. Furthermore the instances of big geldings by Belgian stallions having brought very long prices are so frequent now as to prove conclusively that when properly mated the use of the Belgian is very confidently to be recommended. They ship better across the ocean than any other breed and acclimate more readily.

Belgian horses come in almost all colors, but the most general are chestnut and roan. Bays and browns are also common and black and gray are occasionally met with in the breed. The red-roan and the chestnut are apparently the hues most favored by the Belgian breeders.

Of late years prices of pedigreed Belgian stallions and mares have advanced sharply. There is a great demand for breeding horses in Bel-

gium not only from American buyers but from the Germans as well and the latter seem to be willing to spend more money for what they want than our importing trade will stand. Owing to the efforts being made by the government to encourage the improvement of the breed, the keeping of a popular stallion is a most profitable business and therefore there is comparatively little incentive to sell for export. Not only this, but when a stallion obtains government approval and subsidy he has to do a season of so many mares before his owner can lay hands on the money. This insures the retention of a good stallion in the country for at least one season. Moreover the subsidies are liberal and therefore prices are high.

Importation of Belgian mares has not been extensive owing to the high prices prevailing for them. They are mostly in the hands of farmers who own but a few at the most, and the prices obtainable for their colts suggest to their owners that it is unwise to part with them unless handsome prices are forthcoming for them. The breed is not numerically large, and the high values have prevented our importers bringing over as many mares as the trade here would have absorbed if they could have been obtained on a lower level. However, quite an improvement is visible of late in this regard this season, and the breeding of Belgians in the United States is therefore likely to be placed on

a broader basis. The few importers who brought over mares in an earlier day have succeeded in breeding some very creditable animals.

THE BRITISH GROUP.

Characteristic of two of the three British draft breeds is the long hair or feather on the legs. This, it may be said, is common in greater or less degree to all horses reared in low-lying lands for generations and once fixed as a characteristic persists tenaciously despite transplantation to higher ground and crossing with smooth-legged stock. Regarding the general appearance and size of the English horses in Saxon times authorities seem to differ, but there is little doubt that some improvement took place after the Norman conquest in 1066. It is highly probable that the horses of the fen country in England—Lincoln and Cambridge—partook quite largely of the general type of the horses developed in northern continental Europe and history teaches us that in the reign of King John or about the beginning of the thirteenth century and thereafter recourse was freely had to Flanders for stallions to mate with the British mares. An evidence of this is provided in the fact that at one time the prevailing color of the heaviest horses in England was black.

It is altogether probable, however, that the

British people have played more or less of a lone hand in the evolving of their draft breeds —as they have in the other branches of live stock husbandry. So wherever they reached out for materials in the early day, whether to Flanders only or to other places as well, the Englishmen and Scotchmen may fairly be said to have made their breeds what they wanted them to be without very much outside assistance one way or another. If a proof of this is required further it may be suggested that while almost all of the other breeds claiming descent from the black horse of Flanders are of black, gray or mixed colors, without white marks, as a general rule, these same colors are now and have for long been at a discount both in frequency and favor in John Bull's island. Still the fact remains that many Flanders stallions were used in Britain and not much more than a century and a half ago at that. All colors are found in both the Shire and the Clydesdale, but the bays, browns and blacks predominate. The Suffolks are a race of chestnuts only.

Endless controversy has raged regarding the origin of the white markings on the Clydesdale and Shire. That they are deeply ingrained in these breeds must be conceded and that the British breeders seem to favor them admits of no doubt. This is decidedly unfortunate so far as the American trade is concerned, and not only the North American but the South Amer-

ican trade as well. It would serve no good purpose to enter into the merits of this controversy. The fact remains that the white seems to be on the increase and so far as this country is concerned this is all the more to be regretted. If the breeders of Britain desire to cater to the trade of the people of the United States they should breed more whole-colored horses. There is no doubt of this. We do not like them all splashed up with white, head, legs and belly.

Starting obviously from approximately the same foundation the breeders of the Shire and Clydesdale, despite cross infusions back and forth at times, which in contiguous countries can not be avoided, have succeeded in evolving two types which differ quite noticeably in the main one from the other. It is not always possible to pick out Shires from Clydesdales or vice versa, but taking the breeds as a whole they are quite distinct. The only good reason which can be assigned for this is the individual preference of the breeders or, if you please, the fashion. It can not be the environment, because you can find in Scotland Clydesdales that look like Shires and in England Shires that look like Clydesdales, but neither is in favor in his native land.

One thing, however, the breeders in both kingdoms have done—they have developed the walk to a marvelous extent and a straightness and trueness of action at the trot which is not

A RUGGED CLYDESDALE

surpassed, if it is equalled, in any other breed. The long, clean, swinging stride of the British drafter, trudging along with a great load behind him, is the perfection of locomotion under such circumstances. How the breeds differ we shall see in the following pages.

Unlike the nations of continental Europe, Great Britain extends no governmental aid of any kind to her breeders of draft horses. She pays no subsidies and she makes no inspections. Every breeder does as he pleases irrespective of his neighbor. Thus the three British draft breeds are the result solely of personal endeavor, undirected by any superior power. The uniformity of type which we see in each of them is little short of marvelous and, I venture to say, an achievement possible only in the Tight Little Isle.

THE CLYDESDALE.

It would obviously be beyond the mark to claim that in an island so small as that which contains England and Scotland there has not always been a more or less free interchange of equine stock. Somewhat mythical accounts have come down about various attempts having been made about the middle of the eighteenth century to improve the native Scotch heavy horses in a sort of wholesale manner, but there is no very accurate description of that breed to be obtained. We may therefore safely conclude

that it did not differ materially from that of England. A starting point is, however, furnished us. In 1750 John Patterson of Lochlyoch imported from England into Scotland a black Flemish stallion. To this horse may be traced in lineal ascent, through the celebrated sire Glancer, alias Thompson's Black Horse, most of the best Clydesdales now living. Rarely does it happen that only one breeder makes a move of this kind, and though we have no such positive evidence as in the case of the Lochlyoch Flemish stallion, we may fairly assume that others were brought into Scotland about the same time. So to the black Flemish blood introduced about 160 years ago into North Britain we may trace the real improvement of the Clydesdale.

At the beginning of the nineteenth century many of the breed were grays. The famous Broomfield Champion was out of a gray mare. In spite of its prevalence the gray color was distasteful to the Scotch, and before the century had reached one-third of its growth, steps were taken to promote the production of the "hard" colors. In this endeavor the Highland & Agricultural Society along in 1829 offered prizes for dark bay and brown horses, barring the grays from competition. The gray color has persisted in small degree, however, though it is no better liked today in Caledonia than it was then.

It was in 1856 that the first Clydesdale stallion was imported into the United States and that one came from Canada. We have no evidence of any direct importation by ship previous to that date. Since that time the breed has numbered among its supporters some of the most intelligent men ever connected with the horse business in any capacity, but a number of these supports have been lost through death or retirement in recent years. Along in the late eighties, at the Columbian and even still later the showing of the Scottish draft horse was second to none. Success crowned the efforts of the breeders to produce the type desired by the Scotchmen and they even beat the Scotch at their own game. Col. Robert Holloway, Alexis, Ill., bred several that were exported to Scotland and won name and fame in that country. It is also freely conceded that the American breeders of Clydesdales have succeeded in producing a greater number of champions and prize-winning young things in the free-for-all competitions at our great shows than have the breeders of any other sort. So much so was this at one time that classes had to be made for imported mares alone, for the reason that they had no chance to defeat the home-bred females. American breeders still send into our leading show-yards beautiful arrays of young things, true to type and excellently furnished, but in the market-place the

Clydesdale gelding holds his own only when classable at the very top. There must be a reason for this peculiar status.

Primarily the American and Scotch trades demand horses of different stamps. For a generation the chief effort of the Scotch breeder appears to have been to improve the length and angle of the pastern and the quality of the bone and hair. To obtain these points they have admittedly sacrificed somewhat the size and weight and ruggedness of their horses. Knowing the preference of the American trade for solid colors they seem to have courted, rather than avoided, continued encroachments of white upon the body color. In short they seem to have had eyes for little but "feet, pastern and feather." That they have succeeded in obtaining what they wanted in well-nigh perfect measure can not be denied, but in gaining this they have partially lost the American trade and inferentially much for the American trader.

We can but note this fact with real regret, because the ideal Clydesdale gelding in point of action and conformation is truly a model and a pattern for the world. The levelness of top, rotundity of barrel, clean bone, well set pastern, prompt, swinging walk with the iron showing at every step, and the sharp trot, with the hocks well flexed and carried close together straight beneath the body, form the combination for which the judge is looking and to which he works.

A QUALITY CLYDESDALE—TYPE POPULAR IN SCOTLAND

In the Dominion of Canada, separated from the United States only by water or an intangible boundary line, which is far from straight, the Clydesdale is the pre-eminent drafter. For more than half a century he has thriven and multiplied and made money for his users. After trial of that length of time he still repels invasions of the other breeds, as he has repelled them since his advent into the country of the beaver. Magnificent pairs of home-bred Clydesdale geldings may be seen in Toronto, Ottawa, Montreal and elsewhere, pairs that are to all intents and purposes pure-bred and which have left a profit from the first hands to the last. Dotted over the Dominion are the Clydesdale studs all the way from Edmonton to Quebec, and there are no shrewder, more representative or broader-minded men than their owners. But the Canadians are a nation of stockmen to the manner born and this may have something to do with it. Besides the Canadians are much more in sympathy with old country ideas and methods than we are, which after all is only natural.

British breeders, however, owe the interest in the United States some measure of co-operation at least. If they would face about and give us the big brawny clean-legged sort that could be named as heroes of a former day when the Clydesdale was in his glory here, we would gladly pay the price and the benefit to the breed

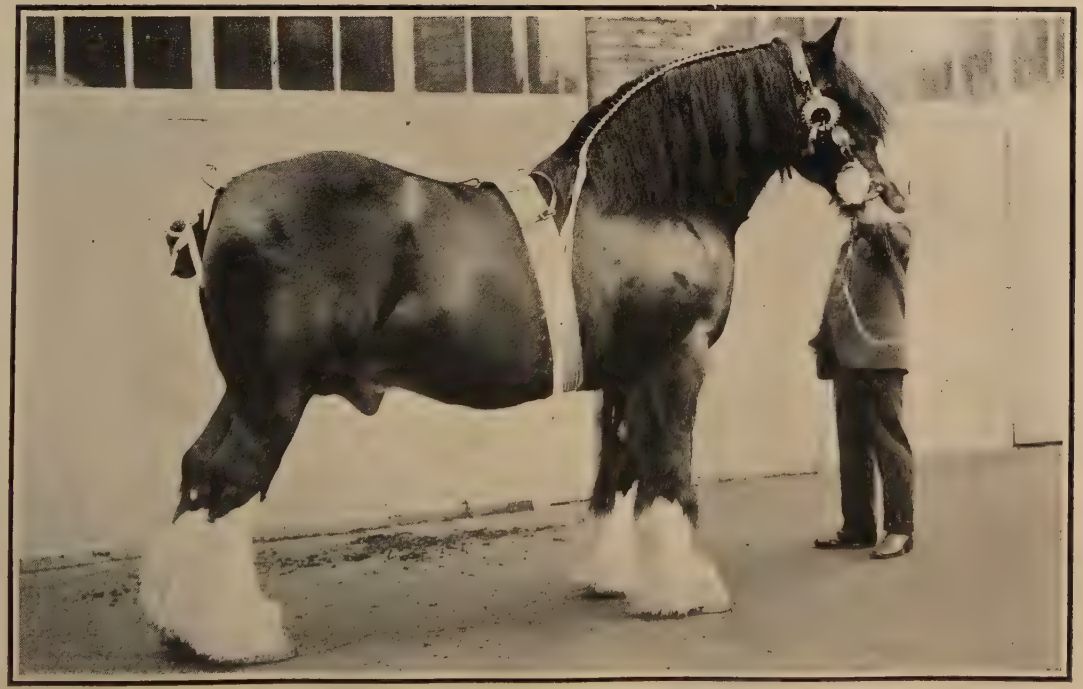
here would quickly become apparent. It never was a numerous breed, and perforce of circumstances never can become in Scotland much more numerous than it is just now, but there is limitless room for its expansion on this side of the Atlantic. It will not expand greatly, however, until the Scottish breeders add more top, more neck, more ruggedness generally and eliminate the white. It would serve a good end if the Highland & Agricultural Society would, in this day of grace, do with the splashed-up kind as it did in 1829 with the grays and bar them altogether.

The supporters of every continental breed of drafter now common in this country have received the most hearty co-operation from the old-world breeders and their success has been commensurate therewith. What they desired they received. Instead of extending co-operation the Scottish breeders have gone their own road, concerning themselves with their own peculiar ideas. This policy of splendid isolation may be a great thing for Britain as a whole, but it has dealt a grievous blow to the Clydesdale interest in this country.

THE SHIRE.

It has already been shown that the Shire traces back to the fountainhead of the black horse of Flanders, but whether in the main he owes his bulk to that strain of blood is quite

A QUALITY SHIRE



A SHIRE TYPE POPULAR IN ENGLAND

another question. Certain it is that none of the other breeds of live stock developed in England owes its scale to any extraneous blood. It would be strange indeed if the Shire alone of all the British breeds should owe his size to an alien cross. In the rich fen lands of Lincoln and Cambridge as great bulk may be produced as on any other spot in the world. There is no way of proving it, of course, but reasoning by analogy it is altogether probable that a breed of drafters would have been developed on these fen lands quite as large as the present Shire if there never had been a Flemish horse at all. Be this as it may, the Shire is just what the Englishman wants him to be. He is markedly different, as already pointed out, from any of the other offshoots of the parent stock.

From the American angle it is hard to say why the English breeders have developed the type just as they have. They have certainly not developed it in accordance with American preferences. Characteristic of the present-day Shire are great bulk, strong bone, a tremendous amount of hair about the legs, far too much white and in many instances a paucity of neck that to an American eye approaches deformity. A tendency to heaviness in the head is also noticeable, but whether this is actually due to lack of proportion, or whether it merely seems to be on account of our liking for a well risen crest, it is hard to say. Nor does it matter. The

Englishman seems to care little for a fine crest. The difficulty, however, which most Shires experience in getting into their collars would indicate that the heaviness of the head is a condition and not a mere appearance.

From the American angle, again it passes belief why any one should prefer a horse whose four legs are burdened with great mops of hair and discard those of equal bone and less feather. Again why so many of the winners should have such splotches of white upon them is something which the American mind can not discern. White markings not only persist, but tend to spread from generation to generation and they are spreading. It does not seem to make much difference in England whether America wants a whole-colored horse or not. No spirit of co-operation in this regard has been manifested and the Shire interest in this country shows the effects of it.

It was not always so. There was a time when the Shire was a popular horse in this country. He is so still, but he does not cover the ground he once did. There is little doubt that English Draft horses, as they were called in those days, were imported into the eastern United States a very long time ago. Tradition tells of a strain of horses called the John Bulls in Pennsylvania which were indubitably descended from imported English stock and some of these found their way as far west as Illinois during

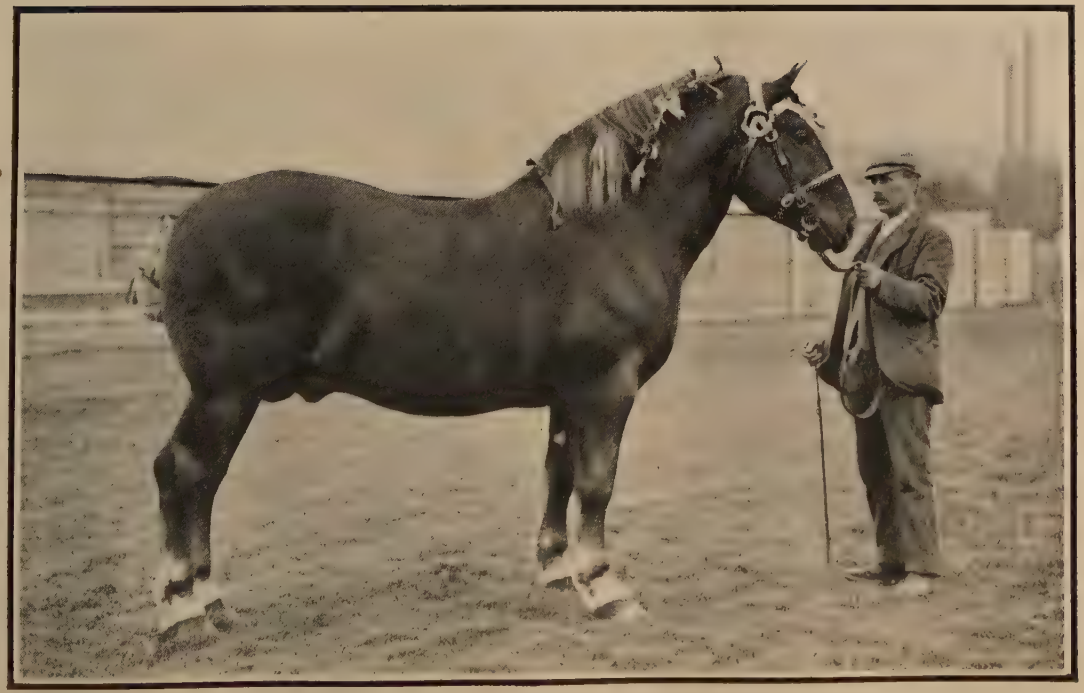
SHIRE MARE AND FOAL.—Foal shows tendency of white markings to spread

the early settlement of that state. George E. Brown, who went to some length to trace this migration, told me that he remembered the strain in the East in an early day and that it was possessed of rare excellence. The general importation of the Shire, nevertheless, does not date back more than thirty-five or forty years and there have been times when many more were imported than are coming across the ocean now.

In his best estate the Shire is a magnificent drafter. He has begotten a vast number of high-priced geldings from the native stock. It is of record that the highest price ever bid for a gelding in the Chicago market—$660—was bid for a red-roan of this breeding. Bulk and strength, depth of flank and rib and plenitude of bone are pre-eminently attributes of the Shire. These are qualities which we require in the grading up process and there is no question that many of the best geldings ever got by French stallions have been out of mares of English blood. It has been claimed for the breed that grading up may be accomplished to greater size with the Shire more quickly than with any other sort and the writer believes this to be correct. Mares carrying from one to three crosses of Shire blood are now perhaps as valuable stock as may be found on American farms, and their foals command the highest prices, no matter to what breed of drafter the

sire may belong. In short the grade Shire mare seems to assimilate readily with whatever stallion she may be coupled, handing on her own bulk and strength and in this regard I count her especially valuable. Everybody likes a good Shire gelding. His massive proportions, strong back, wide, well sprung ribs, long, straight stride and generally powerful appearance commend him to all. In the higher crosses the mass of hair about the shanks is indubitably a detriment, which is but one further proof that the interest on this side of the ocean is suffering from the disregard of its needs displayed by the English breeders. The care of the legs of a Shire in this land of black gumbo soil and intense heat is assuredly one of the handicaps under which the breed strives to make headway.

Still despite this drawback, and the further one supplied by his often too straight pasterns, the elements of success in the betterment of our draft stocks inheres deeply in the Shire. His prepotency is acknowledged, his showing in the market place, numbers considered, is adequate. He has suffered undoubtedly from the very fact that his grade mares produce so admirably to stallions of other breeds. That many of them have been crossed out of their breed continuously, making for the glory and renown of others, is well known. His numbers are not great in this country actually or relatively. He has



A SUFFOLK TYPE

never been the favorite of the rich fancier nor has he ever enjoyed the patronage of any of the monumental characters in the breeding business, though his destiny has been guided by some very shrewd men, yet he has made good for many a poor man.

THE SUFFOLK.

Peculiar to the eastern counties of England in general and the county of Suffolk in particular is the third of the British draft breeds—the Suffolk, one of the most distinctive types of the drafter known. It enjoys the unique distinction of having but the one color—chestnut. This varies throughout all the different shades of that generic hue from the dark liver to the bright golden sorrel, with the most general shade the medium sorrel, as we understand the term in this country. Here and there white markings are met with, but more rarely now than formerly, the white being deemed objectionable by the British breeders. Unlike the other two breeds of drafters in Britain the Suffolk has a very clean leg with no more hair about it than the Percheron.

Regarding the origin of the Suffolk investigators seem to have agreed that in its present habitat there practically always has been a race of chestnut horses. At least it was there back in the beginning of the eighteenth century and it does not appear that any infusion of foreign

or other alien blood has ever been made. Certain it is that the clean leg and characteristic conformation were never brought about by crossing with French stallions. What the breed is today is solely the result of another lone very small territory to which this breed seems to have been indigenous. The chestnut color is readily transmitted to the Suffolk's grades and I have seen some very good specimens among them.

It is doubtful if this breed has ever received in the United States the recognition to which its many good qualities entitle it. This perhaps is accounted for in the fact that the color is not a popular one among draft horse breeders generally, and from the personal experience of the writer there has always been some sort of a lurking suspicion in the public mind that these clean-legged, heavy-quartered chestnuts were French horses of some sort masquerading under a name to which they had no right. It is hard to persuade some folks that the very hairy-legged Shire and the very smooth-legged Suffolk are bred in the same island. Nevertheless the Suffolk can trace his lineage back to the middle of the eighteenth century and beyond in an absolutely unbroken line.

Insofar as they have been given a trial here they have made good. The individuals do not

run as large as the Shire and have proved themselves eminently well suited for crossing on rather small mares, on the ranch and elsewhere. Their progeny is wonderfully uniform and they make most excellent workers. It is doubtful if there is in the entire list of draft breeds one which has a better disposition or greater tractability. In their native land it is the custom of their drivers to break these horses to work entirely without reins. In the plow, on the road, in the show ring, you may see them often hitched three tandem guided by one man and not a rein in sight. For simple endurance it is again questionable if this breed is surpassed. In that part of England where they are used it is the custom to hook up the Suffolks as early in the morning as the daylight will permit and keep them plowing continuously until the daylight fades.

It is on account of their docility and good tempers that the Suffolks are sought for crossing on range mares. In addition to putting neat bodies on their foals, arching up the neck and making them generally desirable in point of conformation, the Suffolk stallions almost invariably imbue their get with such even tempers that the breaking process is comparatively simple. On account, however, of the clean legs and the common chestnut color the foals by Suffolk stallions have no distinguishing marks and hence are swept into the great commercial

maelstrom without their sires obtaining due credit for them. Suffolks are being bred successfully in a number of the states and a ready market is found for the surplus annually, while a few are brought from England each year both by the big importers and by private individuals who have tested the breed and discovered its real merit.

Properly speaking the Suffolk is an agricultural horse rather than a draft horse. He is in spots and places large enough for truck work in the great cities, but not as a rule is he used in the lorry in Britain. Indubitably his size is increasing from generation to generation and he is in the hands of most careful breeders who are pushing his interests in a most intelligent manner. The Suffolk is worth more extended attention by American breeders.

THE LIGHT BREEDS—THE THOROUGHBRED.

Every improved breed of light horses owes its betterment in greater or lesser degree to the Thoroughbred or running race horse. This is our oldest pure-breed, the inception of its improvement dating well back into the seventeenth century. Briefly described the foundation of the modern race horse was laid in the time of the second Charles of England, to which headstrong monarch, whatever else may be said of him, are due the thanks of all humanity for the

A TYPICAL THOROUGHBRED

good he did in the encouragement of horse breeding. This foundation consisted in crossing stallions of Barb and Arabian blood with the native English mares used for the chase and other sports where speed was required. Eastern mares, known as the Royal mares in the Stud Book, were presented to the King and from this quite scanty foundation the magnificent Thoroughbred superstructure has been raised.

As it was for racing purposes that improvement was first attempted under the royal auspices, so it has been for the increase of racing speed that the breeders have worked continuously during all these years. Training for the course has a refining effect on the fibre of any horse. Continued high feeding on food that is not bulky or soothing but stimulating to the limit makes a horse nervous and cranky. The Thoroughbred type is well enough established, but not in the way the type of the Suffolk is, for instance. There is a quality about the race horse that cannot be mistaken, but the breed character is more in its refinement than its similarity of conformation. Here you will see a great three-cornered, camel-backed, raw-boned racer contending with a short-legged, almost cobby foe, the two utterly dissimilar in outline, but both unmistakably Thoroughbred. Few breeders have ever paid any attention to the conformation of the race horses they have bred.

Speed has been the great desideratum and size and shape have been allowed to take care of themselves.

It is not the intention to enter here into any discussion of Thoroughbred bloodlines save in one instance. Listening to men talk of Thoroughbred pedigrees you hear them refer to the lines of Herod, Matchem and Eclipse. There were three great progenitors of speed in the early day—all of eastern origin. The Herod line traces in male ascent to the Byerly Turk, the Matchem line to the Godolphin Arabian and the Eclipse line to the Darley Arabian. These are the three great Thoroughbred strains. Nor is it the intention to discuss racing or breeding for race horses in any of its phases, but it may be noted in passing that the age of every race horse dates from Jan. 1 of the year in which he is foaled. Thus if a colt is dropped Jan. 1 he is a year old on the 365th day after he was born. On the other hand if he is foaled at half-past eleven on the night of Dec. 31 he is a year old when he has actually lived but thirty minutes. This applies to trotters and pacers as well as Thoroughbreds.

As has already been said, the influence of the Thoroughbred has been felt by every improved light breed. To cross in with the race horse was the easiest and quickest way to inject quality, style, speed and stamina. Being the oldest breed, with a stud book started in England in

1791, he was ready to the hand of all who desired to quicken material that was too coarse and too sluggish. So far as the general American farmer is concerned the Thoroughbred is a good thing to let alone. His temperament is ill suited to the drudgery of agriculture.

To the Thoroughbred may be accredited all the different coachers in greater or less measure, and hunters, polo ponies and other horses in which speed and stamina are required are usually his direct offspring. All colors are to be seen among race horses, save only the piebald and skewbald. Grays are very rare now and so are roans, while blacks are not nearly so common as are the remaining hues. This leaves the most of the present-day Thoroughbreds chestnut, bay and brown. White markings are plentiful and keep cropping out in a most bewildering manner when the race horse is used to cross upon cold-blooded stock. There is seldom any uniformity of either color or conformation in the get of a Thoroughbred stallion.

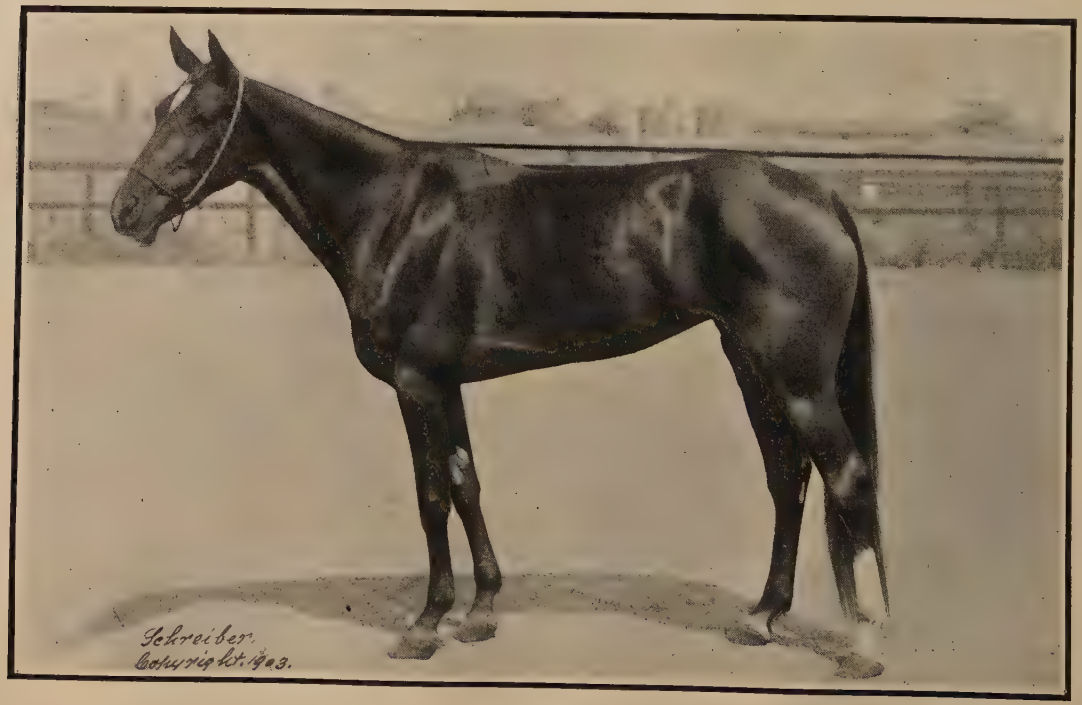
Though he played such an important part in the evolution of the Thoroughbred the Arabian horse is not now of much account. He still has his admirers, but for every purpose to which he can accommodate himself the Thoroughbred is vastly his superior. It is popularly supposed that the spotted circus horses are of Arabian origin. This is a mistake, as the Arabian is

one of the breeds in which a spotted, piebald or skewbald horse has never been known to exist. The common colors are gray, bay and brown, with a few chestnuts and once in a while, though very seldom, a black. The Arab is a small horse, running mostly under 15 hands, slight of conformation, very fine in quality, possessing undoubtedly much endurance but lacking in speed. As a sire of ladies' saddle horses of small stature he is useful and some polo ponies have been bred after him, but giving him due credit for all his good qualities the Arabian horse is a most unimportant factor in modern horse breeding. He has, however, some devoted adherents.

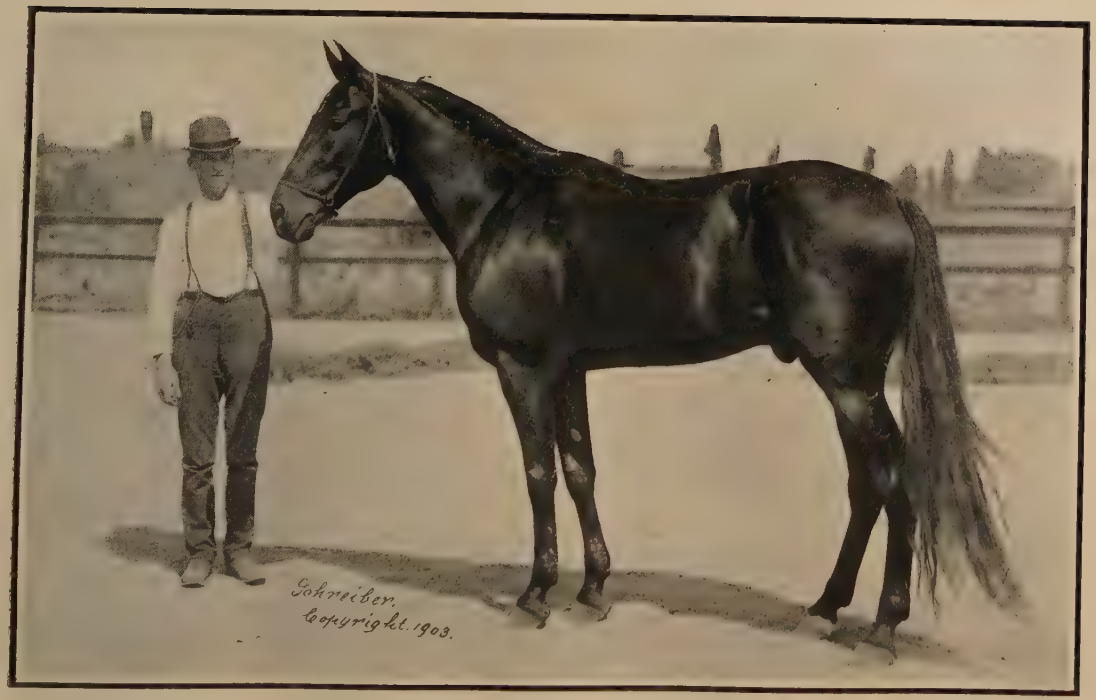
THE STANDARD-BRED.

Only insofar as he is the sire of the modern roadster can the standard-bred horse be given consideration here. Harness racing and breeding for speed are entirely beyond the purview of this work. However, as most of the successful sires of roadsters belong to the Hambletonian strain of the trotting breed it will be necessary to recount briefly how the breed was formed.

Messenger was a gray Thoroughbred horse foaled in England in 1780. He was raced and in 1788 was imported to this country, landing at Philadelphia. He begot a very numerous progeny of horses that could trot and died in



LOU DILLON, 1:58½—WORLD'S FASTEST TROTTER



DAN PATCH, 1:55—WORLD'S FASTEST PACER

1808. He begot a son called Mambrino, which in turn begot a son called Abdallah. A Norfolk trotter named Bellfounder was imported in 1823. This horse is numbered 55 in Vol. I of the English Hackney Stud Book. He could trot some and he begot a mare which will forever remain famous without a name. Back of her were two generations tracing to imp. Messenger, and she is known as the Chas. Kent mare, her owner being of that name—a butcher in New York City. She had some small degree of speed. In due course of time the Kent mare was bred to Abdallah, and Rysdyk's Hambletonian (or Hambletonian 10, as he is otherwise called) was the result of that union, being dropped May 5, 1849. This colt developed phenomenal speed siring ability and from his loins sprang the entire family which now dominates the trotting and pacing sections of the breed.

One family, however, did not entirely make the trotter and pacer, though it completely overshadows all others in it. Mambrino Paymaster, a son of the same Mambrino by imp. Messenger, which begot the sire of Hambletonian, sired Mambrino Chief, the founder of the so-called Mambrino family. The Canadian Pilots and Royal Georges, the Morgans, the Champions and various other strains were incorporated and have been gradually absorbed. From time to time infusions of the Thoroughbred have been injected into the trotter, directly

in some instances, indirectly in others, and the seemingly endless discussion about the wisdom of using the runner to breed the trotter still prevails even unto this day. It is a subject at most only prolific of argument and invective and barren of result. It does not concern us.

Pacers we seem always to have had with us. The historic amble of the riding palfrey in mediæval times was transmuted into the more decided sidewheel gait on American soil, where it took kindly root, and from time to time pacers were imported from Canada which founded families, now mostly swallowed up in the great whirlpool of the harness race horse. Time was when there was a distinctive "pacing conformation," marked by a very drooping rump and a peculiar set of the hind legs. Now the gaits seem interchangeable to a very large extent and, breeding trotter to trotter, no man knows whether the foal will trot or pace when it arrives. The mere shift of the check a hole or two or the addition or subtraction of an ounce or two in the weight of the shoe will convert many a horse from the trot to the pace and *vice versa*. This interchangeability of gait is one of those things no man can understand. It should be understood of course that the trotter progresses diagonally—that is, he advances the fore foot on one side and the hind foot on the other at the same time, while the pacer advances the feet on the same side at the same time.

FAMOUS SIRE OF ROADSTERS AND SPEED
Photo taken in his 20th year

TROTTING-BRED HEAVY HARNESS HORSE

A great triumph have the American breeders scored in the formation of their harness racing breed. In less than a century they have succeeded in developing speed at the trot and pace but little inferior to that of the Thoroughbred at the gallop. They have developed a breed of horses that has no equal for work on the road, a breed which for endurance in long journeys in harness is unsurpassed and a breed which for elegance of conformation, quality, style, courage, docility and general suitability for the purposes intended stands in a class by itself.

Large numbers of high-class heavy harness horses have come from within the ranks of the trotting breed, but they were misfits—horses that accidentally developed heavy harness excellence in spite of the fact that they were bred with a different object in view. It will be unnecessary, once more, to enter into the perennial controversy as to the relative merits of the standard-bred and coach or Hackney-bred heavy harness horse. It must suffice to say that while magnificent specimens have appeared from time to time in the heavy harness classes at the great shows no man has yet succeeded in turning out consistently high-class animals of the sort from standard-bred or trotting-bred parents.

With the lapse of time and the increase of wealth in this country the qualifications re-

quired in the roadster have changed. Not so long ago any horse that could trot a mile in 3:00 was called a roadster in the technical sense of the word. Now the ranks of the road horse are recruited from among the very fastest of the great racing performers, both trotting and pacing. The horse that can not trot to wagon in 2:30 brings but small money on account of his speed and the 3:00 horse is only a pleasure animal. That rate of speed is so common nowadays as to be a negligible quantity in the making of the price.

The great general use for the horse of trotting blood is, however, on the road in utilitarian walks of life. The race course and the speedway consume but an infinitesimal percentage of all the trotting-bred horses foaled each season. The breed is a priceless boon to the country and its fame has extended the wide world over.

Forty years ago the Morgan was the most favored of the road types. This strain may be traced to a single ancestor—Justin Morgan, foaled in Vermont in 1793. Various pedigrees have been allotted to him, but the generally accepted belief now is that his breeding was largely Thoroughbred. He was a phenomenal horse in every way, small, but of astounding strength and stamina. From him descended the Black Hawk, Bashaw, Golddust, Lambert and other families, all of which were famous for road qualities and good looks. Some of the fastest trot-

ters carry Morgan blood in their veins and a measure of it is also to be found in the American gaited saddle horse. The Morgan type may briefly be described as short of leg, thick and round of barrel, courageous and possessing endurance and intelligence of a high order. In the middle of the last century the strain was very popular, but it has nevertheless been absorbed into the great trotting breed and little of it remains to bear witness to its pristine excellence and popularity. An effort has been made to restore the breed to its former position. A stud book is maintained for it and governmental aid has been extended in the attempt to rehabilitate it. Modern horse market demand, however, calls for a horse of greater size and speed, and it is doubtful if any good could be accomplished by restoring the strain. Classes are still made for Morgans at many state fairs, but the general incongruity of the displays made prove that they no longer possess a fixed type. The decadence of the Morgan horse is due solely to the demands of advancing civilization.

Next to the American the Orloff trotter of Russia shows the greatest amount of speed. This breed has had very few representatives in this country, but one or two of them have found their way into the Trotting Register as ancestresses of standard performers. The foundation of the breed was laid in 1775 by Count Alexis Orloff Tchismenski by the mating of an

Arabian stallion with a Danish mare. The result of this union was a colt called Polkan 1st, and he proved a great sire. Continued intelligent effort soon raised the strain to the dignity of a breed, recourse being had to the English Thoroughbred, the Arab, Barb and Dutch breeds for new blood. The Imperial government of Russia has extended plentiful and timely aid to further the development of the Orloff, by subsidizing stallions and offering very valuable stakes and purses in trotting races. A high degree of speed has been achieved, despite the handicap imposed by the peculiar racing rigs used. Of later years, however, American sulkies and harness and more or less American training methods have promoted a material lowering of the Russian records at all distances. Determined to take advantage of the latest American methods of training and racing the trotter the Imperial authorities engaged the noted American trainer George Fuller of Tennessee to go to Russia and take charge of the training operations at the royal stud. Part of his work was to instruct Russian horsemen in the true principles of the art of balancing trotters and so getting their speed out of them. A few American trainers also have been resident in Russia for years and some American stallions have been imported to cross with the Orloff mares. Distances over which these horses are raced are long, extending sometimes to three

miles or even more and are measured in versts. Much racing is also done on the ice, and while the Orloff is somewhat plain according to our ideas of trotting conformation and his action would not be popular in this country, he is nevertheless a real trotter in every way worthy of the name.

THE COACHERS.

When we speak of a coacher or coach horse we refer to a horse well suited to pull a coach. But we have no coaches in these days, as we once had, and if we will look at all closely into the matter we will find that with the negligible exception of the Cleveland Bay not one of the breeds we now call coachers was developed with the object of pulling a coach. This is a rather anomalous state of affairs, but the condition is nevertheless as stated. Among the hills in the English county of York the Cleveland Bay actually at one time did yeoman service in hauling the heavy mail coaches, but there the coach connection stops. War has been the ruling motive in the production of all the other breeds of coachers as we know them in this country today. It was to supply remounts for the army that the French government began the nationalization of its horse-breeding business. It was war that induced the establishment of the different strains of coach horses in Germany. The object in both cases was to obtain a remount that

could carry a soldier and his kit over the ground at a fair rate of speed. Following the ethical coach idea out to its logical conclusion it seems strange that the only real coacher of the lot should, after fair and full trial here, have dropped from sight entirely and that in his native land he should have become almost a memory—not quite, almost. On the other hand the war horses of France and Germany have thriven and multiplied apace with us, the whole of which forms a somewhat strange commentary on the peculiar mutability of equine affairs.

Instead of the old style heavy mail coach we now have the heavier sorts of carriages, the brougham, the landau and the like, and the horse required for use in them we term "coachy." As the prevailing tendency on the part of carriagemakers is to build these vehicles lighter and lighter, the demand calls for smaller horses than it formerly did. In the United States carriages of all sorts are built on a lighter plan than in any other country and the use of rubber tires has aided not a little in this evolution. Hence while the carriage horse or coach horse of the commerce of today is considerably larger than the park horse he is no longer a giant. Sixteen hands is about his limit and he must not be at all coarse.

Quality is the first essential of the carriage horse, which term I prefer to use for the com-

mercial article rather than coach horse. He must be upstanding and commanding in outlook, long in neck, round of barrel, apple-smooth in quarter and with a bit of range to him so that he may not have a cobby or squatty appearance. His throttle and head must be neat and bloodlike, his tail well carried and his temper good, for he has many weary hours of standing still to do while milady makes her calls or while waiting for the train. His action must be high and free in front, though by no means exaggerated and speed is not required of him. In short the heavy carriage horse must be an aristocrat all over or he does not fill the bill. Majesty of mien and step are his distinguishing characteristics.

Dealers who cater to the highest trade tell me that they prefer these carriage horses under rather than over 16 hands. As to the limit of weight, it is hard to say. Weight has little to do with establishing value in a carriage horse. Still we may safely place the limit of 1,250 pounds as abundant to go with a height of 16 hands and preserve the proper proportions. British buyers are more eager bidders for horses over 16 hands than the best eastern buyers are. In John Bull's island they still stick to the older-fashioned heavy type of carriage and consequently they require the larger sorts, not so much as necessary motive power as to preserve the due relation between horses and vehicles.

Be it said here that it is no trick at all to grow coach-bred colts to the proper size. The fact is that it is easy to grow them too large. According to the demands of the present-day market, the big lubberly 16.3-hand horse is a poor one to breed. With such size a horse is rarely able to handle himself. This brings us to a consideration of the coach stallion to choose for breeding the carriage horses now demanded. I count such a stallion of 1,350 pounds plenty big enough and right at 16 hands tall enough. Perfection, which standing still was the very beau ideal of a carriage horse sire, just topped 16 hands a mere fraction of an inch and his weight never exceeded 1,350 pounds. The sire of the half-bred pair which King Edward recently bought from Mr. Vanderbilt is a small horse. The great big ones have never proved as sires the equals of those of medium size. The lubberly kind is without quality, and as quality is a prime essential coarse stallions cannot succeed as sires of high-class carriage horses, especially when mated with mares lacking blood.

A great many of the coach horses imported have been too large and with too little quality. A survey of the advertising files of THE BREEDER'S GAZETTE will show that importers have advertised coachers weighing 1,600 pounds and upwards. I have seen mares in the show ring weighing not a pound less than 1,700 and their

owners bragged about it. Horses of that weight are expressers not coachers, and cannot be expected to beget the sort for which the trade pays the big money. This coach horse business has often been put forward as a sort of double-barrelled proposition: "Get plenty of size and if you do not get a carriage horse you will get a good general-purpose horse," which may be all right enough in its way, but a shotgun policy never yet has resulted in the production of high-class animals and it never will.

It is owing to this rather indefinite policy that many failures of coach stallions to breed well may be charged. Lack of suitable mares also has been a grave handicap, but perhaps the most potent factor of all, where a coach horse has failed to give satisfaction, is the utter lack of an adequate conception of what a carriage horse is which prevails very generally the country over. I have known coach stallions mated with every kind of mare from a 700-pound cayuse to a 1,700-pound three-cross Percheron and then be roundly anathematized because he failed to beget a uniform progeny. It takes a mare of refinement of conformation and good blood to produce a carriage horse that will sell to advantage. If the desire is to breed express horses, the use of the 1,600-pound alleged coacher is defensible. Otherwise it is not. There are exceptions to every rule, but the medium-sized coach stallion is the one to

use when the intention is to breed carriage horses. There is money enough in breeding such horses to make it well worth the while of any man to give the problem careful study.

THE FRENCH COACHER.

French Coacher is a name which we have bestowed of our own motion on a breed of horses which goes by an entirely different title in France. In the Gallic Republic this breed is called demi-sang, which means "half-bred." In the seventeenth century the French set about the nationalization of their horse breeding interests and to that end the government stud or haras was established. Through all the tremendous vicissitudes encountered by the French nation, through the change from monarchy to democracy, through the terrors of the Commune and the enforced national lassitude following the defeats at Waterloo and Sedan, the policy of horse improvement has been maintained with a central guiding hand and one fixed purpose in view. That purpose was to supply remounts for the army. To this end Thoroughbred stallions were mated with native French mares in a far back day and the progeny of course was half-bred or demi-sang. So these horses were called then and so they are called now. A more euphonious title, meaning something to our people, was required when these horses were first imported and the name French Coacher was chosen.

FRENCH COACHER—TROTTING TYPE

When the nineteenth century was about one-third gone the French Government recognized two things: first that the continued infusion of the blood of the Thoroughbred was necessary for the production of the horses it desired and, second, that a fast trot was equally essential to getting the mounted soldier over the ground with the least possible fatigue and the greatest celerity. Consequently in 1836 the government began to offer prizes for trotting races and that policy has been continued to the present day. All the records of all the races that have ever been trotted under the auspices of the French Government are available. It was not however until the present year (1907) that a stud book for French trotters was compiled and published. This is the "Stud Book Trotteur" compiled by M. Louis Cauchois and altogether a work of amazing interest. It shows how the French, without outside aid of any kind have developed a race of long-distance trotters to a highly creditable rate of speed. According to our way of figuring the speed is not great, but its uniformity at the various distances is astonishing. Races at one mile (1,609 metres) are not popular in France. Instead the popular distances are from 1,750 to 4,000 metres or from around a mile and a quarter to a little over three miles.

Records in France are always rated by the kilometre (roughly five-eighths of a mile), no

matter what the distance traversed in the race. That the record, thus proportioned, for the 1,750-metre distance differs only about two seconds from the record for over three miles speaks well for the endurance of the French trotter. Not only this but the races are trotted over turf tracks of the most uneven character, to saddle from a standing start and the methods employed by the French trainers are, in the light of our American experience, execrable. The French are the only people who have undertaken to inject the element of trotting speed into their coachers and this, briefly described is the manner in which they have done it.

It is obvious, however, that not all the families in a breed of such promiscuous origin could have developed speed at the trot. Nor has the attempt been made to spread the trotting conformation and action over the entire strain. Hence it comes about that there are two divisions—the demi-sang trotteur and the demi-sang carrossier, which terms being interpreted mean French Coachers of the trotting type and French Coachers of the coach horse type. As it always has been in the evolution of any certain type one or more strains have given the best results and so it is with the French trotter. The blood of the phenomenal sire Fuschia now dominates the entire French trotting fabric, and as a sire of speed, according to French limitations, the world has never seen

FRENCH COACHER—CARROSSIER TYPE

his like. Infusions of Thoroughbred blood are still being poured into the breed and indubitably the type is changing. As between the two now quite distinct types each must choose for himself. The trotter is going up on legs somewhat, but the refining influence of the track is plainly visible in him.

From the beginning the object has been to secure a high-folding action in front and a clean lift behind, and the training and racing over rough turf tracks have aided in fixing this characteristic. The action of the racing trotter in France is not duplicated elsewhere. He goes high and he goes on with it. Annually the government purchases the best of the three-year-old stallions and relegates them for service to the stud, where they are available to the breeders at merely nominal fees. Under the law provision is made for the maintenance of 3,300 stallions and of these something over 2,000 now in service are of the demi-sang breed. France takes mighty good care to have plenty of horses available for her army.

Being bred so close to the blood French Coachers are generally bay, brown, chestnut or black. The other hues are not wanted.

In his career in this country the French Coacher has suffered both from lack of suitable mares and continuity of effort on the part of those who have patronized him. Besides the efforts of the importers, more especially in days

gone by to catch the public eye with too large individuals never did him any good. Evidence nevertheless is on every hand that when the French Coach stallion of the right sort is mated with mares of running or trotting blood, good quality and suitable shape, success follows consistently.

The question is often asked if horses of this breed are branded in France. Seldom if ever is a government brand to be seen on one of them. Most of the stallions are owned by the government or by private individuals who either can not afford to or do not care to compete with it, but may use their stallions to their own mares. Once in a great while a demi-sang horse is presented for veterinary examination and approval. In the event of his being accepted he is branded with the five-pointed star beneath the mane, but occasions of the sort are so rare that the breed as we know it in this country may be said to carry no governmental brand at all.

THE GERMAN COACHER.

Reading the history of continental European development and bearing in mind that the German Empire of today is composed of numerous states and principalities it is not strange that it should be prolific of different types of coach horses. For perhaps two centuries past efforts at the improvement of the horse with a view to

A GERMAN COACHER

supplying good animals for army use have been made. Necessarily, owing to the number of separate governments involved prior to the consolidation of the empire, there was no fixed single policy followed, for which reason there are marked differences between the various breeds or strains. The multiplicity of states likewise renders it hard to reach very accurate conclusions regarding the early history of most of these strains, but there is no doubt that in point of antiquity these horses rank with any of their congeners.

It does not appear that the Germans have made extended use of the Thoroughbred in the evolution of some strains of their coach horses, though in others the trail of the blood is plainly discernible. It is well known that the German cavalryman with his kit weighs more than the same soldier in any other army and hence it is not to be wondered at that we find the German horses possessing much substance. No effort to inject speed at the trot has been made at any time and hence the German Coach horse as we know him is, so to speak, in a class by himself and not comparable to or to be judged by the same standards as his Gallic neighbor.

The old Duchy of Oldenburg and the district of East Friesland produce the most of the German horses imported to the United States. It is probable that consistent effort at improvement has been carried on in this region for a

longer period than elsewhere in any part of the empire. Less use, too, of the Thoroughbred has probably been made there than in any other district. Government aid is extended to the breeders and stallions are annually approved for public service. Conservative always and hastening slowly the Oldenburg breeders have succeeded in turning out what is probably the most uniform breed of the kind extant. Bays, browns and blacks are the established colors and must have been favored for a long time, as it is a very rare thing to see an off-colored colt after one of these horses. German methods and regulations are at times hard for the American mind to understand, but from such information as may be gathered, horse breeding in Germany is carried on in a manner which is about half way between the nationalized system of France and the free individualism of Britain.

Many questions have been put regarding the brands visible on German Coachers. Application was made to the Imperial Minister of Agriculture at Berlin for an official statement, which runs thus:

"In Germany, that is in Oldenburg, East Friesland, and in parts of Holstein, only young stallions or stallion foals are branded. These brands are for the purpose to prove that the young stallions received premiums. In East Prussia all the produce of mares that are entered in the East Prussian Stud Book are branded with the double 'Elchshovel.' The State has nothing to do with this business of branding."

Desiring also the pronunciamento of some one well known in the trade application was made to Herr Ed. Lübben for a comprehensive statement regarding these brands. He writes as follows:

"All Oldenburg and East Friesland horses exported to your country, passed or not by the government, are branded on the left hind leg. Besides that, in the East Friesland district the government-approved horses are branded also on the neck, and in the Oldenburg district those three-year-old horses which got a government premium are also branded on the neck. At some local shows the prize-winning colts also get a brand on their necks. There being so very few government-approved stallions, in fact hardly any more than are wanted in the districts here, there could only be very, very few sold to go abroad. From this you can see that every Oldenburg or East Friesland horse exported to your country has to be branded on the left hind leg. In a few cases you may find one over there which is also branded on the neck. The Holstein and East Prussian districts have other books and different brands and regulations, but they hardly sell any to to go to your country."

From this it will be seen that the brands on German Coachers form rather a complicated subject, but more information, or rather more extended information, does not seem to be forthcoming.

It was at the Columbian that the American public had its first real introduction to the German Coacher in his proper estate. It is a question in my mind if we have seen better horses of the breed since, though perhaps we have seen as good. During the era of stagnation that followed the closing of the gates of the beautiful White City some little trading in these horses

persisted and more or less desultory importing operations were continued. At that time horse-breeding was not in high favor and state fair exhibits of horses attracted little attention. Still despite this most discouraging reception those who were interested in the German Coacher kept on showing him and as a natural consequence the breed became familiar to most fairgoers. Such stallions as did find buyers became popular in the districts in which they were placed and when the tide finally turned the demand for them opened up in fine shape. They got a lot of good mares to their cover at that time and they begot a lot of colts and fillies that were well suited to the export trade, then flourishing, with the result that their get acquired popularity for the reason that a market could readily be found for it.

At that the German Coacher has suffered from a too general ignorance on the part of farmers of the principles involved in breeding carriage horses. Full of substance and somewhat inclined to grossness the German Coacher has for the most part been mated with mares that were too large and possessed too little quality. That the quality kind of German Coacher will beget the right kind of quality and action when properly mated admits of no doubt. We have seen his grades at shows and elsewhere that filled the bill very close to the edge and the beautiful dark brown color which so

YORKSHIRE COACH STALLION

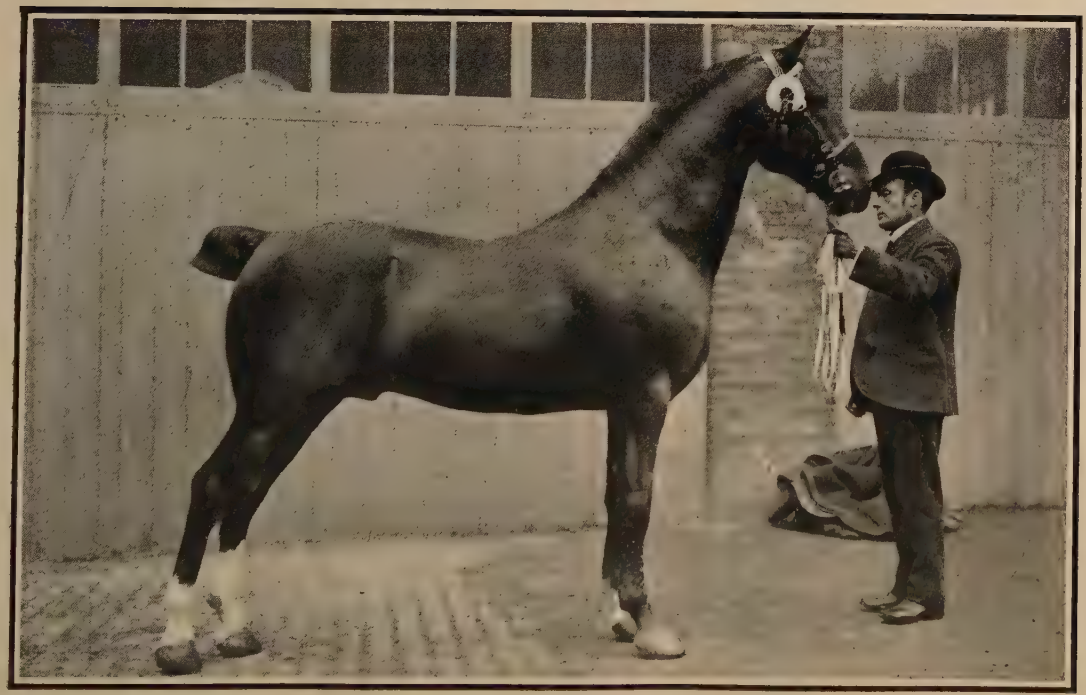
often follows the use of such a stallion has greatly endeared him to the farmers in many districts.

Taking all this into consideration, and crediting him with all the good he has done, it must be admitted that the German Coacher as he is imported to this country lacks quality. Whether the German breeders desire to remedy this defect, I do not know. In the last few years there has been no evidence of a move in this direction, albeit we have seen some show horses of the breed which indicate that there is quality within it which might be utilized for its general refinement. German breeders would serve themselves well, so far as the American trade is concerned, if they would inject more quality, style and "gimp" into the breed as a whole, and trappier action. At that the German Coacher is here to stay, a popular horse and deservedly so.

THE CLEVELAND BAY AND YORKSHIRE COACH HORSE.

Only passing notice need be extended to these two breeds. They had their trial in this country and have been discarded as any sort of a general factor in our horse breeding economy. The Cleveland Bay breed has existed in Yorkshire, England, for centuries and in an older day was used both for agricultural and coach work on the road. As a matter of fact there

never was much of anything about the breed to recommend it. Cold-blooded and not attractive in conformation or action, when bred in its purity, it never appealed specially to American horsemen. Recognizing that the Cleveland Bay was too slow certain English breeders injected Thoroughbred blood into it and called the result the Yorkshire Coach Horse. There are separate stud books in England, but in this country both sorts are registered in one book. Some very beautiful specimens of the Yorkshire Coach horse have been shown here as Cleveland Bays, which was all right so long as they were all recorded in the Cleveland Bay book, but one of the most attractive—though possibly not the best—we remember was a golden bay stallion bred in Illinois and his sire was a horse with three or four crosses of Thoroughbred blood. In short the Cleveland Bay had neither the blood nor the action to become permanently popular in America. True, he did beget from fine trotting-bred mares some high-class carriage horses, but then we must remember the old Scotch proverb that "if you boil a whinstone in butter the bree (soup) will be good." Yet the Cleveland Bay alone of all our so-called coach breeds was in reality a coach horse within the original meaning of that term.



HACKNEY—UNDER 15.2 HANDS

THE HACKNEY.

Prior to the end of the eighteenth century the use of wheeled vehicles was not general in Britain, nor indeed, anywhere else. Roads were few and bad and people stirred abroad afoot or ahorseback. In the eastern part of England there was at that time a strain of riding horses called the Norfolk Trotter and the Hackney is his lineal descendant. It is peculiar how different nations develop live stock along such different lines with the same object in view. In the eighteenth and early part of the nineteenth centuries the Norfolk Trotter was a fast horse, able to gallop, trot, walk and stay. Yet he was a thick-necked, heavy-headed, cobby little horse, devoid of much beauty, if we are to believe that the artists of the time have portrayed him correctly. There is no question about his speed over long distances. There is no need to burden these pages with the records of feats achieved in the dim and misty past, but there is no denying the fact that the trotting inheritance bequeathed to the Kent Mare by imp. Bellfounder materially assisted in the formation of our own unchallenged trotting breed. The action of these old-time English trotters was high both fore and aft, and the general trappiness of the type seems always to have been one of its characteristics despite its heavy forehand and substantial thickness.

With the more universal introduction of

wheeled vehicles came a general refining of the breed. As we have seen the history of the Hackney in this country dates back to the importation of Bellfounder in 1823, but there is a great gap to be bridged between that date and the inception of what we may call the general transference of the breed across the ocean. It was in about 1880 that this was begun and at first the Hackney had a hard row to hoe. The importers seemed to have a craze for bringing over the largest horses they could lay hands on —horses that today would be discarded. Then came the era of the horse-in-harness show. In England the Hackney was par excellence the favored carriage horse for use in the lighter styles of vehicle. He could put up his knees and hocks in approved fashion. So some of our rich men began to support him.

About this time the bottom of the market for trotting-bred horses dropped out so far that it seemed it could never be discovered again. Stallions that had been doing a profitable business at from $50 to $100 a mare suddenly found themselves without anything to do. They were offered for what they would bring. The dealers grabbed at their opportunity and it is no exaggeration to say that in the seven or eight years which followed 1890 thousands of trotting-bred stallions were emasculated, docked and converted into heavy harness horses. Poor excuses they were at the game, these rough old

HACKNEY—OVER 15.2 HANDS

stags, but they were a home product and the invasion of the Hackney was resented in such a partisan spirit that he could not or at least did not get half what was coming to him, if that. Even with the importation of very high-class horses and mares—London Hackney Show and Royal champions—the Hackney labored under the stern refusal of the judges to take him seriously. Some show yard decisions rendered about that time must lie very heavy on the consciences of the men who rendered them, especially in the light of these later days.

Still the Hackney men stuck to their guns. The theater of importation was removed largely from the West to the East and by sheer force of inherent merit the Hackney began to force recognition. Times mended and men began to grow richer. Simultaneously the supply of old stags of trotting breed began to die out. Importations of high-class performers, perfectly mannered and gifted with superb action and conformation were made, and the Hackney set out on the triumphal march which has since culminated in his victory in almost all of the important challenge prizes at all of the great shows. There is no gainsaying that the Hackney has fully come into his own as the recognized park horse in the United States as well as England. Extensive importations of the breed are made annually, not so much for breeding purposes as for showing in harness and in

many instances higher prices are paid in England by American dealers than their British brethren can afford.

Typically the Hackney is not a large horse. Few run to 16 hands and preserve the type required by the best judges. There are still some heavy specimens to be found, but they usually lack in those qualities which have made for the success of the breed. With the lapse of time there have come to be two schools among Hackney men generally—those who must have action first, last and all the time as the prime essential and those who desire quality and beauty of conformation first and a more moderate degree of action to go with it. Personally I am inclined to side with those who must have action at all hazards. To me a Hackney is not worth the name unless he can go like the proverbial house afire. Personally, moreover, I know this: You may go to the New York market with a rather plain horse that can take his knees to his chin and his hocks to his dock and you can sell him right off the reel, whereas if you have one that is full of quality and beauty but can not go much you will have to search some time for a buyer. There is no more pleasing sight in all horsedom than a well broken Hackney going around the arena at the end of a long white rope, doing his stunt with his knees and hocks as he should and withal going on with it. I have little patience with the kind that "can go

all day in a half-bushel," as the contemptuous reference was to all Hackneys in the days of their novitiate in this country. We need a bit of speed in this country as well as lift.

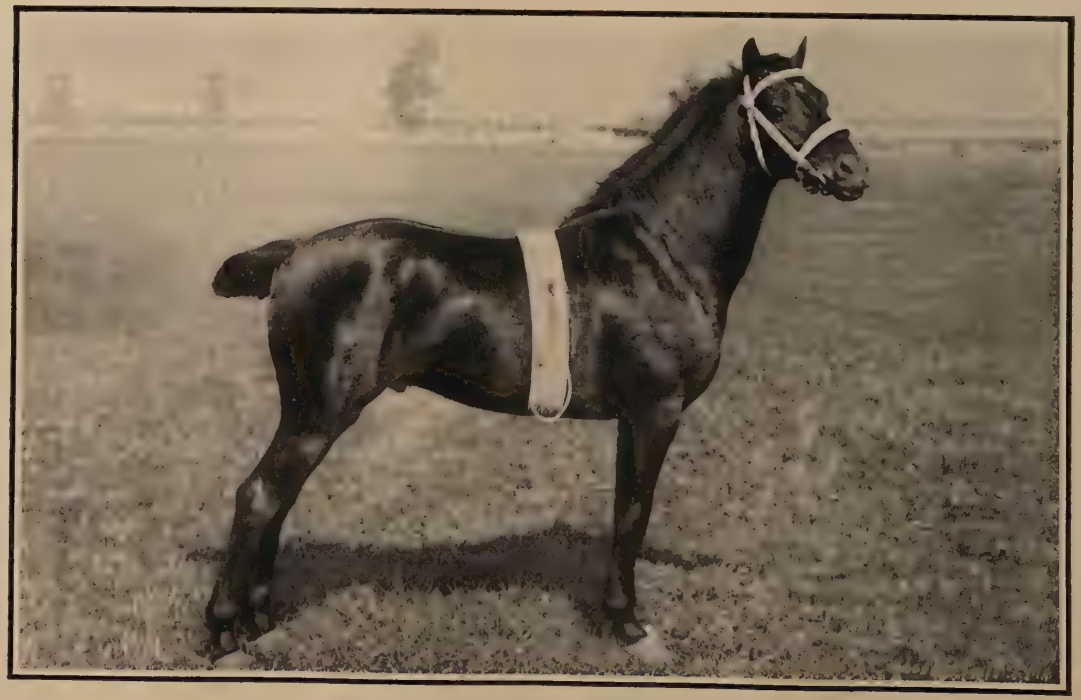
Though we all know what real Hackney conformation is there is still a considerable lack of uniformity in the breed. The similarity of action I count the most salient of its features. The somewhat heavy neck and rather square head are still to be met up with, but the selective operations of the best breeders are tending toward refinement consistently and persistently.

While pure-bred Hackneys have not been produced in great numbers in this country we have had enough of them to indicate that the British breeders have no monopoly on the production of the best. True, the importation of large numbers of the highest-class stallions and mares is too recent to permit of their having been relegated from the show yard to the stud and produced colts that have matured, but it will be strange indeed if with the material we now have to work with we cannot at least hold John Bull level at his own game. In passing I want to say that I count the emasculation of old Forest King nothing short of a national calamity.

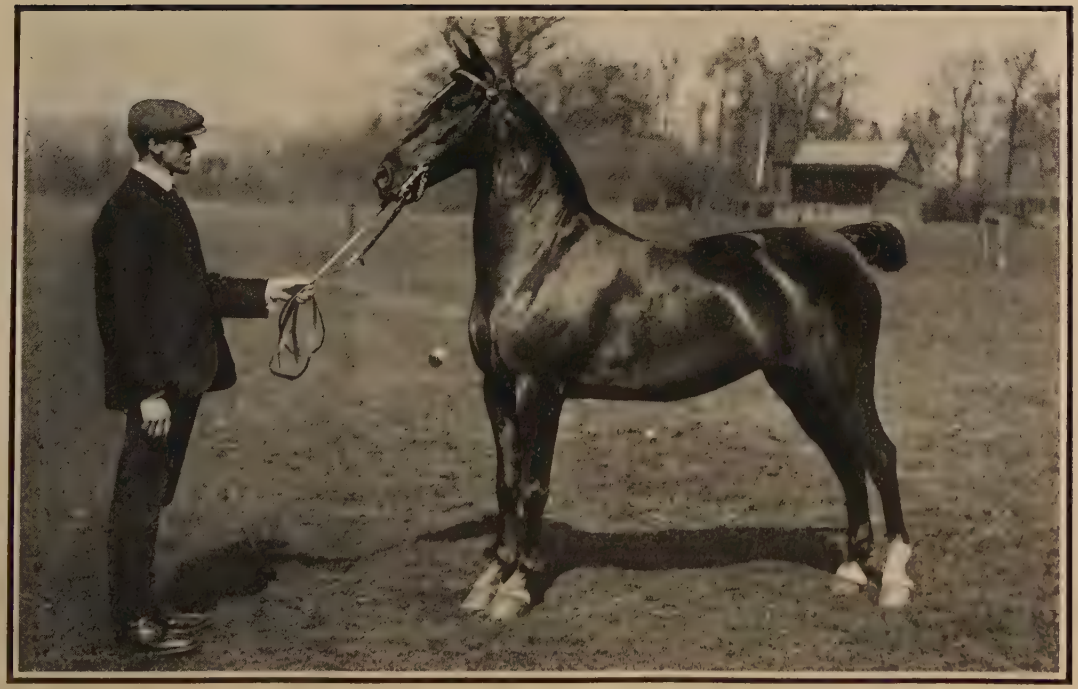
When crossed with native mares the Hackney stallion of the right type has made good. He has transmitted his conformation and action in

due and proper proportion, but the breeding of Hackneys is not a game to be played promiscuously. No one need think for instance that the splendid action of the sire will be reproduced in the progeny as it shows up in the parent. Far from it; the aptitude for development is transmitted, not the finished article. It is much the same as with trotting or pacing speed. Did any one ever hear of a champion Hildred coming green from the field or a Nancy Hanks, 2:04, emanating rough from the pasture? In this way disappointment has often been experienced by those who have bred native mares to Hackney stallions and discovered that the action of the colts as three-year-olds did not equal or at least approximate that of the sire. Disappointment with the mating has then been expressed and the colt sold to a dealer, only to develop into a park horse of approved action.

Medium size, from 14.3 to 15.2 hands, and trappiness of action, together with much rotundity of form and sloping shoulders are characteristics of the Hackney in his best estate. By trappiness of action I do not mean to convey that a good-going Hackney picks his fore feet up high and then slams them down hard on the ground again very little in advance of where they were elevated. Instead of this rough and choppy action the Hackney should advance his fore feet as though following the rim of a rolling wheel, not dwelling in his re-



A SMALL HACKNEY PONY



HACKNEY PONY—MEDIUM SIZE

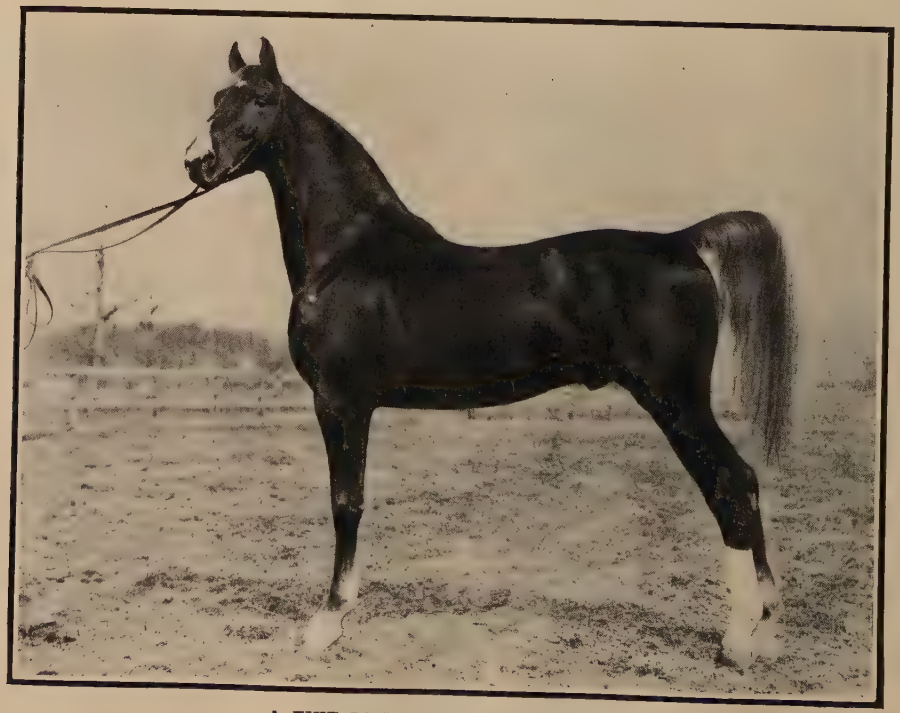
covery but bringing the foot up again quickly and throwing it upward and forward again with machine-like regularity. The hocks should be flexed very sharply, brought up well beneath the body and the hind feet advanced with a springy regular motion that it is not easy to describe. In conclusion the Hackney is the only breed of horses in which the proverb "a good big one will always beat a good little one" does not hold good.

The Hackney pony, which is achieving a great vogue in this country at present, is one of the most attractive members of the equine family. It is safe to say that the most exaggerated action is to be found in these diminutive Hackneys. In Britain these little horses, which range from 12.2 to 14 hands in height, have always been very popular and many of them not only possess wonderfully high action but quite a bit of speed as well. It is only of later years that they have become favorites in America, but nowadays higher prices are paid for them here than in any other country. The Hackney pony, properly so called, is eligible for registration in the Hackney Stud Book, height restrictions not being imposed. Breeding these ponies is a lucrative business, but has not been largely undertaken with us as yet. The demand is broad, however, and constantly increasing and affluence apparently awaits the breeder who can produce a supply of the goods desired.

THE SADDLE HORSE.—THE AMERICAN FIVE-GAITED SADDLER.

United States breeders can lay claim to having developed two breeds of horses—the standard-bred and the five-gaited or so-called Kentucky or American saddler. Both are essentially American products and both distinctive in the great realm of horse breeding. Development of the gaited horse was born of necessity. In the new country pioneered by the old Virginia families distances were long and roads almost unknown. Journeys had to be made in the saddle over mountain and vale, through forest and over stream, and the mind of the rider was bent to the production of gaits which would rid himself of the discomfort of the everlasting jolt of the trot and his horse of the hardship imposed by the canter or hand-gallop. The net result was a broken step which enabled the rider to sit at his ease in the saddle and get over the ground comfortably and quickly.

While the history of the formation of this breed dates back a comparatively short time and lies an open book before us, it is unnecessary to go farther than to state that its main original factors were the Thoroughbred and the pacer. The true pace is an objectionable gait under saddle. The modifications of it, which have been achieved, form the apotheosis of equine locomotion under the saddle. Den-



A FIVE-GAITED SADDLE STALLION

mark, by imp. Hedgeford, was the Thoroughbred stallion whose name stands out most prominently in the history of the breed, as does that of imp. Messenger in the annals of the standard-bred. Development of the gaited saddler has been in the hands of men of much intelligence and in some cases more or less wealth, and though the breed is by no means numerous, nor the breeding studs large, it has overspread much of the country, winning its way by its delightful qualities, beauty and docility. Aptitude to go the five gaits is now a firmly fixed characteristic, transmitted with much regularity, but like the speed of the trotter and the high action of the show ring Hackney the peculiar gaits as we see them in the arena are the result of competent training. The get of the gaited saddler will break its step naturally in what is popularly termed a "singlefoot," but the running walk, fox trot or slow pace and the rack are acquired correctly only under the touch of the master hand. Not only this but when once acquired in acceptable form the rack is readily forgotten or becomes corrupted if not persevered with.

Five gaits are required of the gaited saddle horse—the walk, trot, rack and canter, and as a fifth gait either the fox trot, running walk or slow pace. Demand for three-gaited horses in the eastern markets—walk, trot, canter—after the English fashion has caused many of the

five-gaited horses to be marketed with the three gaits only. In fact the five-gaited horse has never been popular in the East. The West and South have been his strongholds and Kentucky and Missouri and to some extent Illinois are his chief nurseries. The eastern prejudice against the five-gaited horse is against his "easy gaits," not against the horse. Kentucky-bred five-gaited horses divested of their extra gaits have been sold in the East for record-breaking prices and won many firsts and championships at the leading shows. The five-gaited horse is fairly popular in Boston.

It is not altogether easy to describe the conformation of the five-gaited horse. The reader is referred to the illustrations. It is still harder to describe the gaits. One man only—W. R. Goodwin, of THE BREEDER'S GAZETTE—has ever succeeded in setting down on paper what happens as the horse goes through his five-gaits, and I present in full a descriptive article by him which appeared in that paper and which is accepted as standard authority on the subject.

"One of the present encouragements to horse breeding is the keen and widespread interest in saddle horses. The report of the seventeenth annual meeting of the American Saddle Horse Breeders' Association in our last issue gave proof sufficient of the stability of this branch of American horse breeding. That association has sought to establish types through the concentration of blood and allow the user to select the gaits to which his mount shall be educated. Whether the five-gaited or the three-gaited horse, whether the horse that racks or the horse

A FIVE-GAITED SADDLER ON PARADE

that walk-trots, the aim has been to get an animal with inherited inclinations to carry weight under the saddle with a sense of responsibility.

"It is interesting to note that not only in the cornbelt (where saddle horses are not so common as in the southern states) but also in the range countries where day-in and day-out saddle work taxes the riders, there is a desire to learn of the nicer points of horseback riding, the refinements of equitation. These are more readily taught in the riding school than through the printed page, and yet they must be taught in some way. Inquiries frequently come for information as to how to use a saddle horse that has been educated after the southern methods, or in other words how to get a horse to go the gaits to which he has been trained. We have had occasion to try to enlighten readers on the subject, but recurrence to it again seems necessary. In a recent issue we endeavored to describe the gaits of a trained saddle horse, and the subject will stand yet further elucidation, together with some practical suggestions on changing the gaits under saddle. A horse that 'gangs his ain gait' can hardly be called a satisfactory saddler. No horseman should rest content until he has taught his mount to change his gait at a given signal, so that he may command any pace at will.

"First, let us get the names of the gaits straight before we straighten out the gaits themselves. It must be admitted that the term 'single-foot' aptly describes the 'four-beat' gait, or that action in a horse in which each foot has a separate fall on the ground; but 'the powers that be'—the men who breed and train horses, and who conduct the American Saddle Horse Breeders' Association—years ago abandoned the use of that term and substituted the word rack. This is not so pretty a name, but it is shorter, it is correct, and it has the greatest weight of authority for its use. The single-foot and the rack are one and the same gait, but it is better to use the word rack in describing it.

"The word 'lope' is a contraction of gallop. There are three words used to describe this action according to its speed. When a horse is fully extended going fast it is called a run; when he is going at moderate speed it is called a gallop, and when the similar movement is executed slowly it is called a canter. Yet another distinction may be introduced, and that is a hand-gallop. This comes between a canter and a gallop, but it is more nearly like a canter. But there is much more of a difference in these

movements than mere speed. The gallop and run are natural gaits; the hand-gallop and canter are cultivated gaits. The two first-named are rough to ride, the other two are pleasant. The cultivated canter is not only the slowest movement of this action, but it is performed with more restraint; the horse works more on his haunches; his hind legs are better under him; he bounds up in front lightly and drops to the ground in the same manner, sustaining his weight on his hind legs and haunches instead of letting it come down 'ker-plunk,' as in the gallop or run. The canter is done on the curb, and the horse arches his neck and sets his head a little lower than in trot or rack, but the educated horse does not take hold hard in a canter. The slower this gait is performed, when done with promptness, animation and exactness, the better. Hence the Kentucky expression: 'He can canter all day in the shade of an apple tree.' But it should not be a lazy, listless, loose gait. The fore feet should rise from the ground almost simultaneously and the hind feet likewise. The 'three-foot' canter—or a canter in front and a rack or 'jiggle' behind,—is not desirable; it is a mixed gait. The horse that seems fairly aching to run and yet restrains his spirits at the will of the rider and canters lightly on the curb at about five miles an hour is doing the proper caper. This is the educated saddle gait. A gallop is faster, uneducated and far less pleasant to ride. When a horse can canter the rider should have more pride in the gait than to call it a 'lope.'

"All saddle horses educated in the South are broken practically alike. That is, they have been taught the same signals for changing gaits. When trainers themselves have not been educated, but are of the rough 'home-spun' kind, there is no such uniformity of signals. If your horse has been educated by a competent trainer, let us ride out together and see what can be done with him. We will start on the walk; that is the foundation of all sadde gaits. If riding with a double-rein bridle, with curb and snaffle bits, take him on the snaffle lightly. By word or touch of whip or crop, or by touch of spur if necessary, urge him to the top of his speed at the flat-foot walk. Keep him up to the mark. There is a time to lay the reins loosely on his neck and loaf, but not now. Hold him steadily at the flat-foot walk, and if he is a good walker he will carry you four miles an hour; if he takes you five miles in that time you have as good a walker as any man possesses.

"Now we will go from the walk to the running-walk or slow-pace—the slow 'jiggle.' These are easier gaits than

the walk and faster. They are right on the edge of a 'four beat' gait. That is, you can hear each foot-fall distinctly. Loosen your snaffle reins and take hold lightly of the curb and give him a touch of the spur, urging him just out of a walk. These are gaits a little faster than a walk and not so fast as a rack. They are what are called slow gaits. Cleanly performed they are delightful to ride; they are all-day gaits. The real old-fashioned plantation running-walker is a 'nodder;' he keeps time to his paces by the nodding of his head, just as a mule does by the flop of his ears. This gait is literally named. It is an accelerated walk—a running walk, not a flat-foot 'heel and toe' walk. The slow-pace is not the side-wheel gait of the harness horse; there is too much roll to that. It is a similar gait, but instead of both feet on one side of the body striking the ground at exactly the same instant, there is just enough break in the impact to introduce a short interval and rob the gait of the unpleasant roll of the side-wheeler. The fox-trot is the other slow gait. It is a dog-trot, a slow and rather loose-jointed trot, a 'shog.' Whichever gait the horse strikes when pushed out of a walk hold him to it. Do not let him forge ahead into a rack or a trot, or fall back into a walk.

"Now that your horse has shown that he can go along nicely in the slow-pace we will rack down that smooth road ahead which is not too soft on its surface—for the rack is rather a hard gait on a horse and the going can easily be too soft for him. You have him on the curb; increase the pressure a little, give him the leg—that is, grip him with your knees so that he will feel the clasp—and give him the spur. A horse is taught to rack by spurring him forward and curbing him back; he then flies into what may be called a 'condensed trot'—which is a good description of the rack. A racking horse must go up against the curb, and above all things he must not be allowed to fall into the swinging side-wheel pace. If he falters touch him with the spur and lift him gently on the bit to steady him. Do not gouge him or rip him. Spurs should be used thus for punishment only in the most extreme necessity. A willing horse will soon learn to respond instantly, when he feels the heel move backward to his flank, even before he is touched with the steel.

"Let us now drop out of the rack. Release the curb reins, teach him to slow down at the word 'steady,' and come down easily—generally through a running-walk—into the walk. We now want to stir up our livers a bit, and hence will trot over that stretch of road ahead of us. Of course we could have gone into the trot from that fast rack that

we were riding; that is, some horses could have done it, but the ordinary rider will do well to go at each gait from the flat-foot walk, except when stealing into the rack from the slow-pace. Our horses have had a brief breathing spell and are ready for the trot.

"Take your horse on the snaffle entirely; do not lug on both curb and snaffle, as so many do who try to ride with double rein but have never learned how. 'Cluck' to him, and as he prepares to start off begin to post—that is, rise in the saddle. If your horse is 'on an edge' in his gaits he will trot. Sometimes he will make a mistake and start out on a 'jiggle.' Bring him immediately to a walk and try again. As you give him the word this time reach forward and with your right hand grasp him by the mane well up on the neck. If he does not trot then he has forgotten his early lessons and needs to be worked with. Some trainers give the signal to trot by pulling an ear; this is anything but sightly. It is bad enough to have to pull the mane, but to twist and pull at the ear in the attempt to start a horse on a trot is a trick that ought never to be taught. The thoroughly broken horse should trot when he is taken on the snaffle and touched on the neck with hand or crop. This is getting down to a fine point, but that is just where it ought to be.

"If you were riding with single curb-rein bridle you would probably have to take hold of the mane and hold it for a few seconds while you begin to post. The user of the double-rein has the advantage; his signal to trot can scarcely be noticed. This is desirable, as the less fuss and flurry in changing gaits the better. When your horse strikes a square trot hold him on the snaffle and make him work up to it. Do not let him sprawl along in an extended trot, as in harness. Keep him in hand; keep his legs working under him, and post just as little as need be to catch the motion of the horse. Do not rise so high in the saddle at every step that a man could throw a yellow dog by the tail under you.

"Well, is your liver sufficiently agitated for this time? Let us slow down then and walk a bit. We may even loaf a while and let the horses take care of themselves, but it is well not to fall into the habit of it, as the horse will quickly learn to want his own way in everything. And now for the canter, the most graceful and enjoyable gait when perfectly performed. Take your horse in hand. Let him know that the loafing time is ended. Pull him together until his legs are under him; balance him, and take him on the curb lightly, lean forward a bit, and salute him with

THREE-GAITED SADDLE HORSE

HEAVY-WEIGHT HUNTER TAKING WATER JUMP

the right hand. That is, raise your right hand so that he may see it. If he does not 'catch on,' snap your fingers. A well broken horse will at once bound into a canter. An educated saddler rarely forgets this signal.

"We have set forth the code of signals in ordinary use by southern trainers of saddle horses. Of course there are variations. All horses will not respond to all of these signals. A horse has some individuality and a mind of its own as well as a man. In that event something else that he does comprehend readily is tried. But by all means teach your horse to change his gaits at your will and not his."

THREE-GAITED SADDLE HORSES, HUNTERS, HACKS. POLO PONIES.

Walk, trot and canter are the three gaits in the ordinary variety of saddle horse. All horses go these gaits naturally, but it is a great mistake to suppose that any horse which is broken to ride is a "plain-gaited" saddler. Far from it; the three-gaited riding horse has his qualifications as unmistakably as the park horse. These qualifications are briefly summed up as follows: He must be "a horse in front of you," which means that he must have sloping shoulders and a long well poised neck; he must be short and strong in his back, powerful in his quarters; he must be light in his forehand, and he must stand higher in front than behind. If he is made after this fashion there will be a resiliency of motion to his progress which makes for the comfort of the rider and the endurance of the horse. Straight shoulders, short necks and heavy heads are very objectionable. Proper mouthing and mannering are as essential in the three-gaited as in the five-gaited saddler.

It does not make much difference how this

sort of a saddle horse, if to be used for ordinary pleasure riding, is bred, but of course the more good blood he has in his veins the longer will he last, the faster will he get over the ground and the more agreeable mount will he prove in general.

Conspicuous in this group of riding horses is the hunter, but as no great place exists for him in our western equine economy much space need not be devoted to him. The job of the hunter is to carry a human being safely over the country, galloping fast, jumping fences and water as he comes to them and staying over a distance of many miles. There are only a few districts in the United States where hunting is possible, only a few packs of foxhounds and consequently the home demand for hunters is quite circumscribed. Buyers for export to England keep an eye out for horses of the right stamp for this business at leading American markets and many a good western-bred animal has followed the hounds on the other side in recent years.

Usually hunters are the get of Thoroughbred stallions, though not always, but whenever the sire is not clean Thoroughbred he is very nearly so. The blood is required to grant the necessary speed and stamina. The type is well portrayed in the illustration—wiry, powerful and of the "varmint" order. Hunting is a harder business than racing. The negotiation of such obstacles as board fences, hedges, stone walls, high banks with or without deep, wide ditches on one side or other of them, and wide stretches of water, continually recurring in runs of all

A LIGHT-WEIGHT HUNTER

COLORADO-BRED COW PONIES ON POLO FIELD

distances up to perhaps fifteen or twenty miles, requires a high order of intelligence, stamina and much education. It is small wonder then that high-class hunting horses bring very long prices.

Hunters are of two classes—light and heavy-weight carriers, the dividing line being fixed at about 160 pounds. This is to say that a horse capable of doing well over a country carrying a man weighing less than 160 pounds is called a light-weight hunter, and one that can carry more, a heavy-weight hunter. Of course the more weight a horse can pack away in the saddle, go fast and stand up under, the more valuable he is.

The hack is merely a pleasant riding horse, good looking along the lines already described and able to get over the ground at a lively pace.

The polo pony commands high prices. He must stand 14.2 hands or under and he must have speed, great intelligence and an aptitude for dodging, swerving and wheeling around on a dead run. The game of polo, in which he is used, is a most exciting sport. It is played with four men on a side, each armed with a long-handled mallet, and the object is to drive a wooden ball between goal posts. It is essentially a rich man's game, and long prices are paid for ponies of the requisite size, speed, courage and adroitness of motion. Some of the best polo ponies in the world are bred on American ranches. The very best are got by Thoroughbred stallions and reared under suitable conditions of treatment and care. Often,

too, cow ponies of the ordinary variety make excellent polo mounts. The illustration shows a team mounted on such ponies bred in Colorado. The training and general aptitude for the game are more essential to the receipt of large prices than good looks, though all things being equal the best looking sell for the most money. A small but lucrative business is done by a few dealers in picking up suitable ponies on the range, breaking and mannering them, and then offering them as the finished article. The polo pony, however, is a negligible quantity so far as the farmer is concerned.

SHETLAND, WELSH AND OTHER PONIES.

Almost every country has its types of ponies. Their name is legion. Some of these may be dignified by the names of breeds and indeed a few of them possess distinguishing characteristics which some authorities claim entitle them to distinction as separate species of the horse. Prof. Cossar Ewart has of late years made some extended investigations which lead him to dignify certain of the Scotch types as distinct varieties if not species. The Celtic pony is one of them. These facts are mentioned as bearing on whether all ponies are degenerate horses or whether some of them at least have always been as small as they are now. It would serve no good purpose to enter into the arguments which have been advanced on this subject. It will suffice to say that Prof. Ewart's investigations point quite conclusively to diminutive size be-

THE CELTIC PONY—AN ABORIGINAL TYPE

GROUP OF SHETLAND PONIES

ing in some instances at least a varietal if not a specific characteristic.

Britain has many, and all northern Europe is studded with different breeds and types. Asia possesses many distinct sorts and even South Africa has its peculiar variety. In Canada and the United States the various pony strains, such as the Chincoteague and Sable Island, can not be classed as breeds, though distinguishing homologous character is becoming more marked. These American strains are surely degenerate horse reduced in size and altered in conformation to suit their environment.

Best known of all the breeds of ponies in the United States is the Shetland. This breed is indigenous to the Shetland Isles, lying off the extreme north coast of Scotland and distant not much over 350 miles from the Arctic circle. How long these ponies have existed on those islands history does not record, nor yet tradition, but we have authoritative statement that they were there in their present size, or smaller, in 1700. Reared under constant hardships imposed by nature in her most unrelenting mood, the breed from the time it was first written about has been famous for its utility, strength and endurance. Its original use was for riding, packing and work in coal pits, where its small stature and phenomenal strength enabled it to thread the low galleries and drag great weight of coal to the shaft.

Extremely docile in temperament, the Shetland was early transplanted to the richer en-

vironment of the mainland of Scotland and England. In addition to its more menial duties a use was soon found for the Shetland as the pet and plaything of children, and in later years this has become almost wholly the sphere of its activities. Importation of Shetlands to this country began in the middle of the last century and on the kindly soil of many states it has taken root and flourished amazingly. Naturally on the rich lands of the cornbelt there has been some trouble experienced to keep it from growing too large, but the breeders by selection and the wise regulations of the stud book have kept the size down most acceptably. Shetland ponies over 11.2 hands or 46 inches high can not be registered as pure-bred.

Hap-hazard matings in this country have not done the breed any good. In an effort also to keep the size down some breeders have made use of ultra-diminutive stallions irrespective of their individuality, with the result that too often we find them "sheepy" in conformation and lacking in style, finish and action. On the other hand some breeders have demonstrated conclusively that even on the richest soil Shetlands may be bred quite small enough and at the same time little aristocrats from nose to heels. Thick, rotund bodies, neat heads, well-risen crests and short legs neither bucked in the knees nor set in the hocks are points after which the best breeders strive. The more action both of knee and hock the better, but it is hard to get. At that the market for Shetlands has of late

SCOTCH HIGHLAND GARRON, BELIEVED TO DESCEND FROM THE PERCHERON
Photo by permission of Prof. Cossar Ewart

A CHAMPION WELSH PONY—COLOR UNUSUAL

absorbed all offerings good, bad and indifferent. The seal of approval has been set on the Sheltie by the American people, his extreme docility, picturesque appearance and trustworthiness giving him the best sort of a recommendation as a child's mount.

All colors known in horseflesh are to be found among the Shetlands, gray and roan being by far the most scarce. Piebald and skewbald in all the various combinations of bay, brown, black, chestnut and white are common and so are duns, mouse-colors, bays, chestnuts, browns and blacks. The ponies of the Faroe Islands and Iceland run much to parti-colors and it is unquestionable that some of those strains have been mixed with the Shetlands both in Scotland and in this country, but not of later years. These two types differ markedly from the Shetland in conformation, that of the latter being infinitely preferable. The pony in the frontispiece is the champion of the breed in Scotland; the American champion is the second from the end in the group of four. It will be observed that there is some slight difference in the type favored here and in Caledonia.

The Welsh pony, the only other pony breed for which a stud book exists in this country, is of great antiquity—a little larger than the Shetland, a little better set up about the head and neck and generally a better actor. Many of the Welsh ponies have a considerable degree of speed, which is perhaps to be accounted for in the fact that in a very early day small Norfolk Trotters were crossed into the breed on the

hills of Wales. Not all Welsh ponies, however, show the effects of this cross. The prevailing colors are bay and brown. Efforts have been made of late to form a breed of Welsh cobs by mating the pony mare with the Hackney and some excellent results have followed the work of the breeders in both England and Wales. The Welsh mountains form about as bleak and barren a territory as any in which ponies are bred, but the breeders are going forward with concerted aim and still further improvement in this type is confidently to be expected.

RANGE HORSES.

As there were no horses on the American continent at the time of its discovery it follows that all the so-called wild horses of the plains must originally have sprung from Spanish stock. The spread of the American wild horse, so-called, must have been from the Rio Grande northward, and shape, color and size were assumed according to locality. The cayuse or Indian pony may fairly be accepted as the aboriginal type of the horse of the American plains. We all know him. A perfect prodigy of endurance in himself he has yielded readily to attempts at improvement wherever they have been made and he is now not nearly so numerous as he was twenty-five or thirty years ago, but we will always have him with us.

Gradually as settlers crossed the continent the range horse grew into existence. Individuality and speed superior to that possessed by the cayuse were required when the herds of

BAND OF RANGE HORSES

CAYUSE OR INDIAN PONY

range cattle began to take on extended proportions, and each cattle baron strove to breed a line of cow ponies that would serve him well under any and all circumstances. The necessity of the situation developed a strain of hardy, fleet ponies, capable of sustaining great effort and hardship on scanty rations—the cow pony, of no particular breeding as a mass, yet possessing stamina second to none. Running at will on the open range, the production of these ponies was governed by the inexorable law of natural selection in so far as their environment was concerned. All sort of stallions were turned loose on the range, picked up their bands of mares and got them with foal. The progeny fended for itself, survived or dropped out as the case might be, leaving only the best to reach maturity. In time the holdings of the range breeders became very great and prices of both the broken and the unbroken were very low compared to what native-bred horses brought farther east. The supply was limitless, the use practically limited to cowpunching.

Desultory improvement, attempted with pure-bred stallions of the meanest sort, proved that it was no great trick to engraft the individuality of almost any pure-bred sire on the ranger. But the price to be obtained for the unbroken progeny was so low that most of the rangemen bought only stallions for which they had to pay trivial prices. It would not pay, they said, to put much money into stallions to turn out on

the range. A few breeders followed a saner policy and these have succeeded in making much money. Then just about the time some impression was being made on the ranger by the use of pure-bred stallions, the depression of the early nineties hit the business so hard that it was impossible to get any sort of a remunerative price for a range-bred horse. Commission men at wholesale centers refused to accept consignments as the horses would not realize freight and commission charges. Then an enterprising genius established a cannery in Oregon and thousands of horses were slaughtered and made up into salt meat for export. From $1 to $2.50 was paid per head and the owners thought themselves lucky to get so much.

Not being worth anything, range horses received no attention at all until Great Britain went to work to crush the Boer rebellion in South Africa. Her Britannic Majesty's agents scoured the range country from the Rio Grande to the Yellowstone, paying what seemed enormous prices for everything able to carry a soldier. Times were looking up in the range horse business. Owners rounded up their bands and sold them off as closely as they could. It was a good riddance of bad rubbish. Times improved. Horses became scarce in the East and prices began to climb skyward. Then it was, some four or five years back, that the few breeders who had kept at the work of improvement came into their own. Offerings of draft-bred range horses were eagerly snapped up by

the carload. The attention of the breeders was turned to the possibilities of the business. Bands were collected and culled. A better class of draft and other stallions was purchased and more sensible methods of breeding adopted.

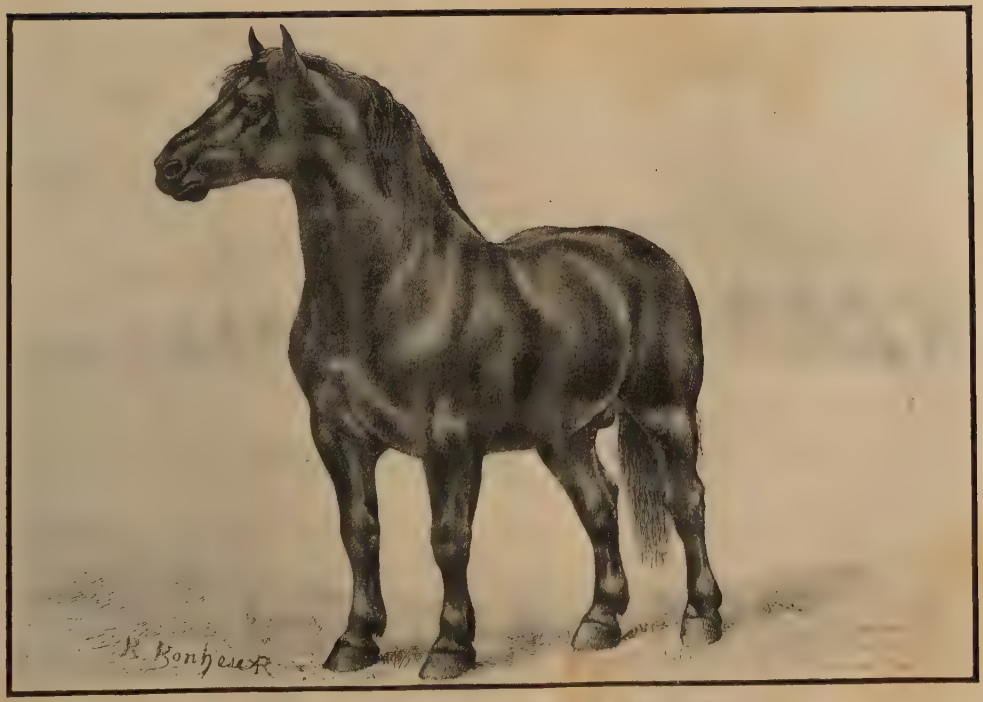
Wherever any persistent effort at improvement by the draft route had been made a rich harvest of profit was reaped. Breeders who had piled two, three or four crosses of pure draft blood on either a native or a range foundation received prices not previously dreamed of. It was found that pure-breds could be produced on the range and perpetuate their characteristics with great prepotency. Free grazing was constricted. It became a choice of fewer and better or get out of the business. The net result today is that all draft-bred range horses are bringing unprecedented prices, as high as $161 having been paid per head for four-year-old geldings and mares by the carload of twenty head, unbroken, but weighing in grass flesh from 1,350 to 1,500 pounds. Unfortunately many of the breeders, despite the success which they have achieved, are for the most part still pursuing the short-sighted policy of using inferior stallions. A disinclination to pay the price for a high-class breeding horse seems ingrained in the business, though evidence that the best pay the highest dividends is by no means wanting.

In short the range horse breeding business is on a most prosperous footing at the present time. The extraordinary development of the

western country—railroad, irrigation, lumbering and urban construction work—has absorbed every available horse of size on the northwestern range, prices increasing according to the weight offered. This has induced breeders to take better care of their mares and young things and still greater betterment in this direction must inevitably follow increase in values. High-class carriage and driving horses, too, are being produced on the range and the cow pony flourishes and brings prices double and treble those he brought in the good old days when the cattle barons trailed their beef herds hundreds of miles to a loading point. It does not seem that the cornbelt can soon produce a supply of drafters sufficient to its own and the needs of the East. It will be a long time before the Pacific Coast states can breed a sufficiency. The outlook is surely rosy enough to warrant the range breeders in making use of much better stallions than they have hitherto purchased.

THREE FAMOUS STALLIONS.

In a reminiscent article written for The Breeder's Gazette I cited as the three greatest celebrities of the Clydesdale, Shire and Percheron breeds the stallions McQueen, Holland Major and Gilbert. This was from a show yard point of view exclusively, but in point of general usefulness to the Percheron breed Brilliant must be substituted for Gilbert. Holland Major and the famous black stallion that made so much of Oaklawn's early reputation have



BRILLIANT—FROM THE PAINTING BY ROSA BONHEUR

long ago joined the silent majority, but McQueen is still hale and hearty.

It is unfortunate that good photographs of Holland Major and Brilliant are not extant. In those rather distant days the art of animal portraiture by the camera was not developed as it is now, but the picture of Brilliant is of historic interest, as it is by Rosa Bonheur. The photograph of McQueen was taken when he was in his twenty-third year.

Holland Major was the standard for the aged Shires in the American show ring for many years. All the other importers bore him in mind when scouring England for a horse that could win. He was a Shire of much quality and well nigh perfect in conformation with the exception of his rather effeminate neck and head. George E. Brown who owned him never gave him a chance in the stud until death mercifully removed the brown stallion Elcho, to which Mr. Brown pinned his faith for many years. When he did get his chance in the stud Holland Major made good. His progeny was not, however, numerous and his services to the breed must be chronicled as having consisted more in his extraordinary show yard career than in his greatness as a sire. He was foaled in 1882 and won the championship at the Columbian in 1893—his crowning triumph on the tan-bark.

Brilliant belonged to a somewhat earlier era,

having been foaled in 1876. He was imported in 1881, and it may truthfully be said of him that he founded a family in the Percheron breed the like of which the history of no other draft strain records. His sons and his grandsons topped their classes with striking uniformity and his blood has been doubled and twisted upon itself in the most extraordinary mixture of in-breeding and line-breeding that has no parallel in draft horse breeding. He was never a great horse individually—even Rosa Bonheur's picture does not show him to have been that—but he bred extraordinarily well. Not only did his sons become celebrated in the stud, but his mares did likewise, and I am sure there are many horsemen who will agree with me when I say that his daughters were superior as a band to those of any other Percheron stallion they have ever known.

McQueen was foaled May 15, 1885, was imported in 1887 to Canada and to this country the same year. His career in the show ring extended from that fall to the Columbian, and he never met defeat in his class and only once in a championship. Premier in the Blairgowrie stud, his get were synonyms for youthful Clydesdale excellence and they kept coming from foalhood to maturity. Blairgowrie had only a few mares at the most and McQueen begot comparatively few foals in the United States. His percentage of prize winners is, not-

McQUEEN IN HIS TWENTY-THIRD YEAR

withstanding, higher than that of any horse I know. In 1899 McQueen was returned to Canada and his career in the Cairnbrogie stud there since then is worthy of notice as showing how much money may be made out of a really successful getter even at a moderate fee. In the season of 1899 he covered 182 mares and got 94 colts at a fee of $15 to insure. The next season his fee was raised to $20 and has remained in that notch ever since. Since 1900 he has never covered less than 200 mares and his smallest quota of foals was 123. Here are the figures: 1900, mares covered 214, foals 127; 1901, mares 223, foals 147; 1902, mares 204, foals 133; 1903, mares 209, foals 141; 1904, mares, 261, foals 172; 1905, mares 217, foals 123; 1906, mares 208, foals 142—a grand total of eight seasons, 1,717 mares covered and 1,078 foals. As he stood at $15 to insure in 1899 he earned $1,410 that season, and in the seven following years he begot 984 foals at $20 each, amounting to $19,680—a grand total of $21,090 for his eight seasons' work. Verily he merits the title I bestowed upon him—"The Matchless McQueen."

These figures are of much value as showing that an old horse may be capable of doing extensive and excellent work in the stud and that a really good getter is a gold mine.

PART III.

HYGIENE, UNSOUNDNESS, DISEASE.

In the first part of this book I have endeavored to point out that certain things must be done with horses in order to keep them in health. In this chapter I have no intention of specifically invading the domain of the veterinarian. It would be easy enough to explain didactically the methods of treatment which should be employed in stated diseases if one could but be sure that every case would develop alike, and the advice would be valuable if every reader was an accurate diagnostician. It is hopeless, however, to anticipate such an ideal condition and hence I make no effort to prescribe generally remedies and methods of treatment. My experience shows me that the best thing to do when a horse gets sick is to send for some well qualified practitioner and let him say what is to be done. There are a few remedies of standard merit which may be used without any danger and to much advantage—remedies which I have proved to be satisfactory—and the formulæ for them are detailed in their proper places.

A horse is a robust animal, easy to keep in health by the exercise of ordinary common

sense. Epizoötic and infectious diseases will invade stables despite all efforts to keep them out and most colts have a siege of strangles, which is the correct name for the malady generally known as distemper. It is indubitably owing to the outdoor life he leads that the horse is practically immune from tuberculosis. He is forced in working to be outside and to breathe deep the free air of heaven. The exercise he is made to take in the harness also keeps his digestive apparatus working nicely, so long as he is not over or underfed, so long as his food is wholesome and is not suddenly changed. Highly organized, the horse resists the ravages of disease in a remarkable manner, and the characteristic action of drugs is readily obtained upon him. At that he is a complicated subject. It takes a long time to learn about his structure and it is admitted that accurate diagnosis in diseases of the horse is harder to make than it is in the human subject.

As an all too frequent rule too much medicine is given to horses. Some veterinarians seem to have nothing short of a mania for ordering large doses of various combinations of drugs given often. Nature should be given a chance. The drug of itself is worth nothing except that it gives the system a chance to work out its own salvation. Farmer-breeders also have a craze, it seems, for feeding condition powders, stock-foods and other compounds to

their horses indiscriminately, irrespective of whether the animals are doing well or the reverse. If a horse is out of condition or sick the remedies administered should be those which have been proved to be curative under similar circumstances. This "doping" a horse with a lot of different drugs, whether in the form of a stock-food, condition powder or anything else, is all wrong. A shotgun prescription never yet effected a cure. I am not much of a believer in proprietary "dope" anyway. A few of these proprietary remedies are of standard and meritorious efficacy, but many of them are worthless. I suggest that those who desire to discover much about the composition of patent remedies, designed for the human as well as the equine subject, purchase the book, "Secret Nostrums and Systems," by the late Dr. Charles Oleson. Dr. Oleson was a friend of mine and to my certain knowledge devoted a great deal of time and care to collecting the data presented in his most interesting work.

Among farm animals the horse is the only one which is immune from tuberculosis, and the manner of his life is conceded to be that which grants him his immunity. He is out almost always by day and often at night. Pigs and cattle are too often closely confined indoors. Sheep, which suffer little from tuberculosis, are also animals which live outdoors. The lesson of this is that all stables in which

farm animals—not merely horses alone—are housed should be amply ventilated, with adequate provision for the egress of the foul air and the ingress of the fresh air from outdoors. I can well remember in my early days in the West when stables were shells and the blizzards fierce. The horses which lived and grew old in those miserable sheds throve and worked and were healthier than their pampered relatives of today, which are kept in barns which are palaces in comparison to those old prairie shacks. Horses will stand a great degree of cold without injury.

Provide free ventilation, shutting off draughts of course. Rather let the barn be cold and freely ventilated, so that the supply of pure air is constant, and use blankets on the horses, than coop them up in close premises where the air that has been breathed once must be breathed over and over again. Systems of ventilation for stock stables of all kinds have been brought to the point of perfection. No farmer has longer an excuse for keeping his animals in foul quarters. On the whole I do not favor underground or bank stables for horses. I would rather have them up on the level. Bank barns are usually dark and damp. Sunlight and oft-changed air are the great destroyers of filth germs. It has been stated before in a previous chapter, but it will bear repetition: stable litter, outside of the dirt of the city

street, is the most prolific of noxious germ life of all known substances. In damp, dark, dirty stables germ life multiplies at a rate altogether incomprehensible to the average human mind. Let in the air and sunlight. Those are the best disinfectants. It should hardly be necessary to enjoin on all horse keepers the absolute necessity of cleansing the stalls freely at frequent intervals and of keeping a supply of absorbent bedding to take up the liquids voided by farm animals. Horse manure in summer is the favorite breeding place for flies. At all seasons of the year, when not in the light it fairly teams with noxious microbic life.

Cleanliness in every department of the stable should be insisted on. Mangers should be kept clean at all times. Notwithstanding this, it is the exception rather than the rule to find them so. Corn on the ear is a very general food for farm horses. The kernels are bitten off the cobs and the latter are left in the feedbox, covered with saliva and therefore most fertile media for the propagation of germs of all sorts. Nevertheless, it is no uncommon sight to see farm help shove the cobs out of the box into the manger, where they lie and sour and take up room until they get to be troublesome when they are thrown down into the stall and finally find their way into the manure pile. Slovenly methods of this variety should have no place in the management of an up-to-date stable on the

farm or anywhere else. Take the cobs out at each feed and burn them. They make good in the cook-stove or heater. Similarly stems and trash should always be cleaned out of the hay rack. A horse noses over his roughage quite a good bit. What he leaves should be taken away from his head at least. Mashes fed in the feedbox leave a lot of dampness behind them and as a consequence the box gets sour, which is equivalent to saying that germs are propagating apace. Iron mangers are the best, but expensive. If the feedboxes are of wood, feed mashes in galvanized iron buckets. Keep the feedboxes dry and let the sunlight get to them if possible, any way much light.

Pine makes most unsatisfactory stable fittings. Beech wood, owing to its close and cranky grain, is by far the best when it is available. Horses love to gnaw pine, and once they get into the habit, no matter what is originally the cause, they are hard to stop. Usually, however, horses get to chewing mangers and board fences because they are not salted or fed enough. This is not always true, but it most generally is. Often, too, horses undergoing the troubles of dentition will seek surcease from troubling in gnawing wood. The beech wood fittings, stripped with strap iron, or better still iron fittings, are the best remedy, though after all most wooden stalls get chewed more or less with the lapse of time and many changes of tenants.

I do not like concrete floors for horses to stand on. Concrete is cold and absorbs heat quickly. A floor of the kind makes what the Scotch call "cold lying" for any animal. The best floor for standing stalls is made of concrete with a portable floor of narrow slats nailed to cross-pieces of about an inch in thickness. This sort of a floor, plentifully bedded, permits the liquids voided to pass readily away. The concrete floor should of course have some slight slope on this account, but never much. A horse likes to stand with his head uphill a little bit. In boxstalls the best floor is hard clay—clay that will make good bricks. Lay a foundation of coarse gravel and then tamp down four to six inches of clay. Nothing is much more abominable in a stable than a floor of rotten old planks half-worn through and the decomposing urine oozing upward whenever the horse steps around. No amount of good bedding can counteract the hurtful effect of such filth.

Recurring again to the necessity of having stables well ventilated and well lighted, let the windows be large and many. Never under any circumstances place a little cubby aperture directly in front of each horse's head. Thousands of barns have been spoiled and thousands of horses have been ruined by this senseless, though fortunately now obsolete method of ventilating and lighting a stable. Make the doors

plenty large enough and have screens for both doors and windows for use in summer. Keep the grain in a feed room and make incessant war to the death on rats and mice. Likewise keep chickens away from the horse stable. Chicken lice appear to thrive and multiply amazingly on horses and the annoyance they cause and the flesh they destroy are in proportion. Show me a farm where the fowls and the horses young and old hob-nob continually and I will show you a lousy lot of stock. This is perhaps a homely and inconsequential point in the estimation of some folks, but it pays well to keep stock of all kinds free from parasites.

In a previous chapter the necessity of feeding clean grain and roughage to horses has been emphasized. To this end an oats cleaner should be installed and every pound of the grain fed should pass through that most useful contrivance. Oats may look to even the practiced observer to be nice and clean and free from the contamination of seeds that are worthless for feed, and trash of various sorts, but the same practiced observer will often be astounded, when a bushel of the grain has been run through the cleaner, to see the great heap of hurtful matter that has been eliminated. The awns of the oats, bits of straw, fragments of binding twine, leaves of weeds and a multiplicity of weed seeds will show up in far greater volume than was anticipated. These by-products of the oat har-

vest may advantageously be burned. If they are fed to the horse the trash will reduce the feeding value of his ration and the seeds will go through him whole, to be carted off with the manure, scattered on the ground and in time reproduce their kind. Good clean oats, as has been stated before, contains about 18 pounds of husk and 14 pounds of kernel to the measured bushel, supposing that the same weighs 32 pounds. If there is a lot of other innutritious matter in the feed, the proportion of nutriment to the whole amount fed is reduced in just that proportion.

Every season there is more or less immature or soft corn on every farm—some years more, some years less. There never was a year yet when the frost did not get somebody's corn patch. This immature corn is of course left on the stalks as long as possible and then the freeze-up comes and the ears look hard enough. Husking is done and the corn goes into the crib. By and by the heating process takes place and the corn becomes moldy. Perhaps continued cold may keep the ears looking well enough, but the mold is there just the same and its germs spring into life as soon as the damaged grain reaches the equine stomach. If there is one thing that is worse than another for horses in the way of feed it is moldy grain. It should never be fed to them. If it is Hobson's choice—soft corn or go without—then

my advice is to spend money for good horse-feed. It will pay. True, thousands of horses have eaten moldy, half-rotten corn and got away with it all right, but enough have been killed by such alimentation to have bought good feed for them and all the rest and left a handsome balance on the credit side of the general ledger. Oats that have heated in the stack and have sweated out quite dry and free from dust —which is a rare combination, by the way— may be fed with little fear of evil results. When they are dusty they are to be avoided, though oats that have not been properly matured or cured are not nearly as hurtful as moldy soft corn. It is not always possible for the farmer to feed just exactly what is best, but the point to be emphasized is that whenever such a thing is possible only the cleanest and best grain should be fed to horses.

Immense barns in which great quantities of grain and hay are stored and many animals housed are not the most advantageous. The risk of total destruction by fire is too great. On well regulated breeding farms, where the stallions are worth many thousands of dollars, you never find them stabled in a large structure. It costs more, of course, but a small stable for the work horses is infinitely preferable to any part of a huge structure that looks fine from the road and is liable with its contents to go up in smoke any time some old

tramp comes along. It never was good policy to put the whole batch of eggs in one basket. Horses are proverbially chuckle-headed in a fire. I have in mind a splendid big barn that was the pride of a great farm and was constructed in accordance with the plans of a noted builder. An immense amount of hay and grain was stored in its capacious loft and in the boxstalls on the ground-level many mares and foals were quartered. It went afire—how no one ever knew—and life was risked to get out the animals. The men who liberated the first four mares and foals neglected to close the doors after them. Three mares and four foals dashed back into the blazing structure and were cremated.

On the ruins of this palatial barn arose one still grander in its proportions and equipment. The insurance companies, which made good many thousands of dollars for the building burned, were consulted absolutely as to the plans. A handsomer structure than the new barn there was not in one of the most populous and best farmed counties in a great state, yet it burned to the ground in a short time after it was put into commission. Had the same amount of money been utilized to construct several smaller stables the loss could have been confined to one of them. Besides it is easier to provide for the thorough lighting and ventilation of small stables than it is for large

ones. In every instance, wherever it is possible, light a stable at night by electricity. With the spread of the inter-urban railway it is in many places possible now to obtain the service of the electric current at small cost.

A manure heap at the door of a stable is an abomination. Experiments have proved that it is most profitable from a fertilizing point of view to haul manure to the field and spread it as soon after it is made as it can be accomplished, but whether that is done or not, get the litter far away from the stable. With a great festering manurial sore right at the very door of their dwelling horses cannot be expected to be and remain as healthy as they would be with the stenches and flies and microbic life such dumps breed removed far from them. Keep the footing in front of the stable well graveled, dry and free from accumulations of every sort.

In a previous chapter the rearing and feeding of young horses and the care of brood mares have been gone into at length. Such stock needs dry quarters and to be kept out of the mud. Therefore it is the poorest sort of policy to let horses plow through muddy fields of cornstalks. Keep them in the dry. If it be necessary to use cornstalks as roughage, either feed the stalks whole on dry footing and spread over a large area or have them shredded and feed in racks. Horses can stand almost any

degree of cold, but they do not thrive in the rain. Give them good shelter always. Close confinement is bad for any horse, more especially in his younger days. If he is kept up closely his feet will grow awry somehow, undue strain will be put on some part or other and unsoundness will develop as the inevitable result.

Tracing the life history of the horse from foalhood to maturity we find that the first thing he is likely to encounter is joint disease (omphalo phlebitis) due to germ infection at the navel. Usual symptoms of this dread malady are droopiness, listlessness and swelling of the joints. Protrusion of the intestines in the region of the navel (umbilical hernia) is also common, the apparent swelling being soft and capable of reduction by gentle manipulation with the fingers, forcing the intestines back into their proper place. In both of these cases the services of a veterinarian should be requisitioned as quickly as possible. Joint disease is greatly to be feared and for that reason a condition of the utmost cleanliness should be provided when a mare foals.

As a yearling strangles is about the next thing a colt will encounter. Like children and measles, few colts get away without a spell of this trouble. This is a disease which is contagious and which runs a well defined course, as a general thing, and usually a benign one. It is a

peculiar disease. Sometimes it will break out, seemingly sporadically, on one farm, attack the young horses on it and die out without farther invasion of neighboring properties. At other times it will take a whole countryside at a sweep. When a colt is coming down with strangles, he coughs huskily, his throat is sore, and he has some difficulty in swallowing. He sticks his head out and sometimes there is considerable fever and sometimes very little. Sometimes the afflicted animal will keep on eating and sometimes he will refuse all food. Later there comes a swelling between the jaws which in time will burst and relief will then follow. Irregular strangles exists when abscesses form in parts of the body other than between the jaws. In such cases there is much danger of blood poisoning. In all instances summon the practitioner and let him treat each case as its needs indicate. As a rule good nursing, keeping the patient comfortable, the administration of stimulants and coaxing the appetite to the limit will do more than medication, though it takes the veterinarian usually to say when medicine should or should not be given. Purgatives should never be administered to colts suffering from strangles.

Worms are often troublesome to both colts and horses. Many veterinarians use turpentine in two-ounce doses administered in half a pint of linseed oil, the horse having been fasted for

ten or twelve hours or more. Other practitioners insist that there is little virtue in this remedy. Colts running loose may be given free access to a "lick" consisting of equal parts of common salt, ground gentian, sulphur and dried sulphate of iron. Wild horses which can not be dosed may be given a tablespoonful of this mixture in the feed daily for ten days, then drop it off for a similar period and repeat. This remedy should not be administered to pregnant mares.

At almost any stage of his existence a horse is liable to colic. A sudden change of food, damaged grain, watering immediately after eating and a half-dozen other causes may be assigned for colic, which is of two kinds—flatulent and spasmodic. There is not a whole lot of difference between the two, but in flatulent colic the horse will bloat considerably, owing to the presence of gas inside him and he will be continually in pain. In spasmodic colic the pain is recurrent. In both the horse will look round at his flanks, paw, lie down, get up again and repeat. In his spells of ease the horse with spasmodic colic will often appear quite comfortable. Both are the result of indigestion and complications are frequent. It is said that more horses die with colic than with any other disease in the entire list of those to which they are subject. Hence it is wise always to get the veterinarian whenever possible and as promptly

as may be. Primary symptoms of impaction and inflammation of the bowels are much the same as those of colic. However, if the services of a practitioner are not immediately available the following remedy may be administered in any case of colic pending his arrival:

Turpentine one ounce, canabis indica one-half ounce, alcohol four ounces, water one pint. Shake well and give as one dose. A bottle containing this mixture may with profit be kept in every stable from which the residence of a veterinarian is far removed.

Founder (laminitis) has many causes, but a primary essential is a deranged condition of the digestive organs. The blood stagnates in the very tender structures of the front feet and sets up acute inflammation. As the structures affected are confined within the horny box of the hoof, intense pain is caused. There is not much use for any layman to bother with a newly foundered horse. Invoke professional advice, but first get the horse down off his feet and into some sort of a comfortable recumbent position. Time and again I have seen men who should have known better force foundered horses to stand up, when every ounce of pressure on the feet meant untold agony and comparative comfort ensued when the animals were forced to lie down. Usually under prompt and skillful treatment the horse may be relieved in a comparatively short time, but in cases that are neglected

or not treated properly chronic laminitis ensues. In such cases the soles of the feet come down and the horse walks on his heels, being practically worthless. Even this condition is not incurable for I have known a horse whose soles were very badly down recover under heroic treatment and later go as sound as ever he did. It is doubtful if it would pay to go to so much trouble and expense with the general run of horses suffering from chronic founder. I mention this case to show that within my personal experience chronic founder has been cured and the lowered soles of the feet elevated to their normal position.

Azoturia has become more common of late years than it was in the days when horses were not as highly fed as they are now. Cause of this malady is continued high feeding of grain during suddenly enforced idleness. A horse, commonly working hard, may be kept in the stable for a couple of days and be given his usual ration of grain without any exercise. On being hooked up again he will start off blythely, but after a short part of the road has been covered he will come to a standstill, break out in a profuse sweat and stagger to a fall. The cause of the disease is simply that in idleness the eliminatory channels have not been able to remove the waste matter from the system. It takes exercise to develop the malady and an infallible symptom is the dark, almost black, color

of the urine. When a horse goes down with this trouble, keep him as quiet as possible. Do not move him. Get the veterinarian and the first thing he will do, if he knows his business, is to empty the bladder. Thereafter the treatment must be governed by the indications of the case and is too intricate to be attempted save under the guidance of the practitioner. To avoid attacks of the kind see to it either that horses are regularly exercised or that when they must be idle their rations of grain are very greatly reduced.

Overheating is commoner in cities than in the country. Attacks of this kind are brought on by working horses too hard on very hot and humid days, but there never was a case of the kind known where the horse was not suffering from some form of indigestion. It is extraordinary what degrees of fever may be discovered in badly overheated horses. I saw a case last summer where the temperature ran up to 110° and of course dissolution supervened speedily. Usual symptoms are that the horse will dry up if sweating, lag behind his mate if in a team, stagger and go down with a crash, the common verdict being "sunstroke." It is not sunstroke, but exhaustion. The best thing to be done is to turn the hose on the horse and play the water all over his body. This cools off the tissues, the force of the water materially aiding this process. In default of the hose get

cold water to him somehow in great volume. When he arrives the veterinarian will administer stimulants.

Influenza is a malady peculiar to the horse and is caused by a specific germ. Its symptoms are largely the same as in strangles and complications quite likely. In this disease the mucous membranes of the eyelids are quite frequently enlarged and inflamed, giving rise to the name of pinkeye, by which it is frequently designated. Get the veterinarian. Pneumonia is now attributed to a specific germ and is known to run a regular course, favorable termination being dependent largely on the degree of resistance developed by the patient. Usual symptoms are that the horse is dull, will not lie down, will not eat and the membranes of the eyelids and nostrils are highly colored. The temperature rises and if the ear is held to the ribs a rough grating sound is heard in the lungs. The horse stands with his head poked out in front of him and inclined downward. If he holds his head up he has not got pneumonia. When these symptoms are observed, blanket the horse warmly, bandage his legs and summon professional assistance.

Heaves are caused by feeding too much innutritious, bulky, moldy or otherwise damaged food, watering habitually immediately after eating and putting to work too soon after meals. While heaves affect the breathing of a horse,

the tissue of the lung undergoes no material change. The active cause seems to be a deranged condition of the pneumo-gastric nerve. Once fairly established heaves are incurable, though the condition of the animal may be materially improved by feeding oats straw in place of hay, and only a little of it, and good bright oats, wetting all food, watering before meals, never afterwards, and permitting a rest of at least an hour after the food is eaten. A little flaxseed jelly fed with the oats is also beneficial and Fowler's solution of arsenic does more good than any other drug that may be administered. The use of this remedy should, however, be deferred as long as possible, as its effect is cumulative and it can not be given continuously. An ounce a day is the maximum dose which may be given and it should be tapered off gradually when it is desired to stop. At that, the condition of the horse will not be improved when the effects of the drug have worn off. There are many so-called heave cures. Some will give temporary relief. A permanent cure is an impossibility.

Whistling or roaring is caused by increase in size of the laryngeal cartilages and the consequent diminution of the passage through which the air may be expelled from the lungs. The only possibility of a cure lies in the removal of the distended cartilages by surgical operation—laryngectomy—but that is a most unsatisfac-

tory and uncertain operation at the best. In cases of cough it is always wise to consult the veterinarian. The affection may be local and it may be a symptom of pneumonia or some other malady.

A horse's teeth will frequently require attention. The grinding surfaces are prevented from coming together by jagged projections and the food is not properly masticated and ensalivated. The result is a staring coat and general lack of thrift. In such cases the veterinarian will file or "float" the teeth into normal condition and the horse will make proper use of his food.

Periodic ophthalmia or moon-blindness is common enough among farm horses. It is first observed when the eyelids are seen to droop, tears run freely and the horse keeps the eye closed as much as possible. The eyeball at first has a dull, rather opaque appearance and gradually becomes covered with a light-colored scum. One eye or both may be affected, or the trouble may move from one eye to the other. If left to itself the eye in the first attacks will clear up in ten days or two weeks, but the trouble will inevitably return sooner or later. There is no cure for moon-blindness. When it appears put the horse in a darkened stall, cover the eyes with wet cloths and obtain expert advice. The first treatment will usually serve as an example for all the rest, but in the end the

horse will go blind in spite of all that may be done for him.

Wounds of greater or less severity are of frequent occurrence among farm horses. It makes a good deal of difference where the wound is and how it was made, but there should be no great trouble in healing one up if common sense is used. A wound of any magnitude should be submitted to the attention of a veterinary surgeon. If it is a clean cut he will sew it up after cleansing it thoroughly and it will often heal without farther trouble or as they say by the first intention. Jagged wounds, such as often result from contact with barb-wire, need not be sewn up, for the partially isolated fragments will slough anyway. Deep or punctured wounds, caused by snags and the like, are the hardest to heal and almost invariably suppurate and discharge pus, healing from the bottom. The surgeon will probe such wounds for foreign bodies, syringe out the cavity with an antiseptic lotion and be governed by future developments as to his further treatment.

In different localities and at different seasons of the year wounds take on curious aspects. Invasion of germs, development of proud flesh and fungous growths cause so many vagaries in their history that it is impossible to lay down specific directions that will fit all cases. However, one thing is certain. The worst that can be done to a wound of any sort is to be eternally

fussing at it with soap and water. That combination should always be kept away from a wound after the first cleansing has been accomplished, and the laceration dressed. If the cut or tear is small the daily application of a little carbolic lotion (teaspoonful carbolic acid, water one quart), or some good coaltar dip as directed on the container, will be all that is needed. In more severe cases the surgeon on the spot, or fully advised of the conditions, alone is competent to prescribe intelligently.

Fistula of the withers is caused by a bruise of the tissues of the part named, perhaps by the saddle, or collar, sometimes in mares by the bite of the stallion during coition, and indeed in any way in which a bruise may be inflicted. Sometimes fragments of the processes of the backbone are broken off. The result of such a bruise is that pus forms deep in the tissues and burrows along, forming pipes. Symptoms are swelling and intense pain. A fistula is a very nasty thing to deal with and no one who does not thoroughly understand it should attempt to affect a cure himself.

Spavins, ringbones, sidebones, curbs and navicular disease are the commonest unsoundnesses of the bony structure of the legs. Spavins are bony growths on the inside of the hock and low down upon it. This bony growth or exostosis interferes with the working of the joint and the play of the tendons over it. There are

many cures advertised to remove the lameness caused by a spavin and also the bony growth, but nothing short of a chisel and a mallet will perform that latter feat. Ringbones are likewise bony growths appearing on the upper and lower pastern bones, more frequently on the hind extremities than the front. Firing and blistering comprise the treatment most likely to succeed in removing the lameness in both cases. Sidebones are ossified lateral cartilages in the fore feet. The lateral cartilages spring from the wings of the pedal bone and in their normal condition are designed to aid in taking up the concussion caused by the contact of the foot with the ground. The sidebone takes away this aid to resilience and lameness supervenes after a time. There is not much that can be done to cure lameness caused by sidebones, but in certain stages of their development the cartilages may be amputated and the horse get along very comfortably for a time.

Curbs are caused by the pulling apart of the fibres of the sheath of the tendon on the hind leg right on the back of the hock not far below its point. Blistering and friction are the usual methods employed to reduce the enlargement and cure the lameness consequent on the rupture of the fibres as described. Navicular disease is caused by a roughening of the sesamoid bone over which the large tendon plays at the

back of the coffin or pedal bone. Inflammation having been set up within the foot, the surface of the sesamoid bone puts forth small projections and the tendon playing over these, instead of over a perfectly plain surface, creates intense pain and general inflammation of the structures within the hoof. There is no cure. Relief may only be obtained by the operation of neurectomy, which consists in the section of the nerve which insures sensation in the part of the foot affected.

Bog spavins have nothing to do with the bone at all. They are situated on the inside of the hock and take the form of soft puffs. They are caused by the undue secretion of synovia or joint-oil, which distends the bursa or sac where it is stored and so the puff becomes visible. Many horses display very large bog spavins and at moderate work never go lame, while at hard work acute lameness frequently ensues. There is little to be gained by blistering these enlargements, but a skillful veterinary surgeon may get rid of both them and the lameness by a delicate operation with the firing iron. Thoroughpins partake largely of the same nature as bog spavins. They are distensions appearing at the back of the hock, well up toward the top of that joint. The fluid may be pressed from one side of the joint to the other. They seldom give much trouble and are best let alone. Splints are bony growths found just below the

knee on the inside of the foreleg. They usually appear in young horses, seldom cause lameness when the horse is not overworked and are absorbed before the horse reaches maturity. It seldom pays to bother with them, though at times they cause lameness.

Sweeney is caused by the pressure of the collar in young horses mostly and results in atrophy or wasting away of the muscles of the shoulder. It is a tedious process to restore the muscular tissues to their normal condition, blistering, the insertion of setons and the injection of turpentine beneath the skin being variously advocated in the treatment of this trouble. Collar galls are caused by the bruising of the tissues by the collar and if not properly attended to result in the formation of fibroid tumors which must be dissected out before the shoulder may be healed over smoothly. Ill-fitting collars frequently cause sitfasts to form on top of the neck. These are pieces of dead skin closely adhering to the tissues beneath and must also be dissected out. It pays to have the collars fit properly.

Warts are of frequent occurrence about the muzzle of the horse and sometimes they appear on other parts of his body. If the warts are broad and flat saturating them with glacial acetic acid drop by drop daily for a short time will cause them to disappear and the application of castor oil has the same result in many cases.

If the warts spring from a small neck they may be snipped off with sharp scissors and the spot from which they were cut seared to stop the bleeding. Or a silk thread may be tied tightly around the neck of the wart and in time it will slough off.

Lice and diseases of the skin are best combated by the application of some good coaltar dip diluted according to the instructions of the makers. Care should of course be taken to wash for lice or dip for parasitic skin disease during pleasant weather.

Sores on the legs of horses are an almost sure sign that systemic treatment is required. Scratches and cracked heels are no exception to this rule. In cases of scratches and cracked heels water should never be applied. Keep the parts dry at any cost. Apply a little bland ointment, wipe it off night and morning and thoroughly hand-rub the parts. The friction seems to be a necessary part of successful treatment. In the meantime the horse's digestive apparatus must be put in good working order. Cases of grease heel are almost hopeless and entail in the attempt to effect a cure a long continued course of diet which includes no grain, systemic treatment and surgical operation as well.

Finally we approach the subject of grooming and clipping. To a fine-haired horse the currycomb is an instrument of torture. Its

sharp teeth cause him much pain and irritate him greatly. The dirt may be got out of the skin with the brush and the currycomb should be used to cleanse the brush, not the hide. In coarse-coated horses naturally the use of the currycomb on the skin is more or less necessary, but it should always be used lightly.

If horses in winter are forced to work so hard that they must sweat freely and must reach their stalls wet and uncomfortable, they should be clipped and kept clipped all winter. A horse with a long winter coat thoroughly saturated with sweat will take from four to six hours to dry out, the heat contained in his grain ration being thus diverted from its proper uses. On the other hand if he is clipped, rubbed off lightly when he comes home and is then blanketed he will dry out in half an hour, remain warm all night and his food will be utilized to repair wasted tissue. If his work is such that he does not sweat habitually, it does not make much difference how long his coat is.

Abortion is the most deadly foe of the horse breeder. Whenever a mare slips her colt isolate her at once and if the fetus can be found burn it or bury it deep in quicklime. Summon professional assistance promptly in order that the mare may be treated intelligently until the parts resume their normal condition. No breeder can afford to take any chances with abortion. The veterinarian will flush out the

vagina daily or give instructions how it should be done with some antiseptic wash. Mares which abort and are promptly treated should not be bred again until the proper period after the date at which they would have foaled had they carried their young to full time. Once she has aborted a mare is very apt to repeat at about the same stage of a subsequent pregnancy. Care should therefore be taken to watch her closely about that time and she should be kept as quiet and free from excitement as possible. If she shows signs of approaching premature birth get expert aid at once. Trouble may often be headed off by administering fluid extract of black haw in half-ounce doses every other day, beginning perhaps three weeks before the time at which she may abort and continuing as long after it. It is best, though, to place the mare under the care of a veterinarian. Still the black haw is a standard remedy in such cases. Strong medicines should never be given to in-foal mares.

Discharges from the vagina, such as leucorrhea (whites) should always be treated by injecting into the vagina some antiseptic solution, such as a one-per-cent solution of permanganate of potash. Solutions of coaltar dip are also useful for this purpose, the strength being gauged according to the instructions of the makers, and often a simple alkaline solution—of bicarbonate of soda for instance—will neu-

tralize the acid secretions, clean up the organs and facilitate conception. Mares showing any discharge from the vagina should not be bred until they have been thoroughly cleansed and the discharge stopped.

I have made no effort in the foregoing chapter to cover more than the commonest ills to which horseflesh is heir. I have laid stress on summoning professional aid promptly because I have seen so much loss result from a disinclination to spend money on veterinarians' fees and a desire to fuss and tinker with dangerous cases until too late. Then aid would be summoned when it was of no use. It is always best to head off trouble as soon as possible.

APPENDIX.

STATE AND TERRITORIAL STALLION SERVICE LAWS

Most of the states now have laws granting liens on mare and foal, or both, resulting from the services of properly advertised stallions. These laws, as an examination of the following pages will disclose, differ very materially in the various commonwealths. Stallion owners will find it very much to their advantage to comply absolutely with the provisions of these laws as they relate to the obligations imposed upon them, and in all cases to seek protection under their terms. For a stallion owner to file his list of mares, in order to perfect his liens, does not imply distrust of his customers. Taking such action is merely an evidence of sound business sense. When the lien is perfected those who will not pay voluntarily may be forced to pay and those whom the stallioner may desire to favor are none the worse off. The wording of some of the statutes is not clear; in such cases the advice of a local lawyer should be sought.

ALABAMA.

"The owner of every stallion, jack, bull, ram, he-goat or boar, who keeps it for a profit and charges a price for the service thereof, shall have a lien, for the amount of the stipulated price therof, on any mare, jenney, cow, ewe, she-goat or sow," to which such sire shall have been bred and also on the offspring born next after such service. The statute provides that this lien shall be paramount over all other liens, but it has been held to be subordinate to a prior recorded mortgage.

Upon filing bond and affidavit the sire owner may have an attachment,

1. When the claim is due and payment is refused.
2. Whether the claim is due or not, "when the defendant has traded off, or otherwise disposed of, or there is good reason to believe he is about to trade off or otherwise dispose of, or remove from the county, any of the animals on which the lien exists, without paying the stipulated price for such service."

ARIZONA.

There is no regulation of the stallioner's business in Arizona, and no lien is given to him.

ARKANSAS.

"The owner of any male animal kept for the propagation of his species shall have a lien upon any female animal to which such male is let, and the offspring of such breeding, for the sum contracted therefor, which lien shall attach at the time of service of such male, and shall not be lost by reason of any sale, exchange, removal from the county, or other disposition of such female animal, but upon such sale, exchange, removal or disposition without the consent of the person holding the lien, the same may be immediately enforced."

CALIFORNIA.

"Every owner or person having in charge any stallion, jack or bull, used for propagating purposes, has a lien for the agreed price of its service upon any mare or cow and upon the offspring of such service, unless some wilfully false representation concerning the breeding or pedigree of such stallion, jack or bull has been made or published by the owner or person in charge thereof, or by some other person, at the request or instigation of such owner or person in charge.

"Every claimant of a lien provided for in the preceding section must, within ninety days after the service on account of which the lien is claimed, file in the office of the county recorder of the county where the mare or cow subject thereto is kept, a verified claim containing a particular description of the mare or cow, the date and place of service, the name of the owner or reputed owner of such mare or cow, a description by name, or otherwise, of the stallion, jack or bull performing the service, the name of the owner or person in charge thereof, and the amount of lien claimed. Such claim, so filed, is notice to subsequent purchasers and encumbrances of such mare or cow and of the offspring of such service for one year after such filing.

"Action to enforce this lien may be brought in any county wherein any of the property subject thereto may be found, and at the time of issuing summons in such action the plaintiff may attach the animals on which his lien exists, as provided in the code, by delivering to the clerk an affidavit, showing that the defendant is indebted to the plaintiff upon a demand for the service fee, and that the sum for which the attachment is asked is an actual bona fide existing debt, due and owing from the defendant to the plaintiff, and that the attachment is not sought, and the action is not brought, to hinder, delay or defraud any creditor or creditors of the defendant."

COLORADO.

"The keepers of stallions, jacks, bulls, rams and boars have a lien on the get of such animals for the space of one year after the birth of the get, for the payment of the service fee of such stallion, jack, bull, ram or boar."

CONNECTICUT.

There is no lien law in this state, but one who by false representations obtains the registration of any animal, or who knowingly gives a false pedigree of such animal, is liable to a fine of not to exceed $100, or imprisonment for not more than one year, or both.

DELAWARE.

"From and after the passage of this act each and every colt in this state shall be liable for the service of the stallion, its sire. Provided, however, that in any and all cases where the pedigree or qualities of the stallion is misrepresented by its owner or agent, then the foal shall not be liable for the service as aforesaid.

"In order for the owner or owners of any stallion to avail themselves of the benefits of this act, it shall be necessary for such owner or owners to have printed and posted, at ten of the most public places in the county in which the said stallion or stallions are to stand or travel, a full description and pedigree of his or their stallion or stallions, and to exhibit a copy to the owner or owners of any mare about to be served by such stallion." The stallioner must bring his action within sixty days after the foal is dropped, and after refusal to pay the fee. After judgment the lien reverts back to the day of the foaling of the colt and is prior to any other execution or mortgage.

DISTRICT OF COLUMBIA.

There is no lien given and no stallion regulation in the District.

FLORIDA.

"Owners of stallions, jacks or bulls shall have a lien of superior dignity upon the colt or calf of the get of said stallion, jackass or bull: provided however, that such service shall have been done upon the application of the owner of the mother of such colt or calf."

GEORGIA.

The owner or keeper of any stallion, jack or blooded or imported bull or boar in this state shall have a lien on

the get thereof, for the service of such stallion, jack or blooded or imported bull or boar, for the period of one year from the birth of such get, which lien shall be superior to all other liens, except the lien for taxes. The lien herein provided for shall not become operative unless the same be recorded in the office of the clerk of the superior court of the county wherein the owner of the mother resides, within six months after the performance of the service, and the said clerk shall keep a book in which all such liens are to be recorded, and said clerk shall receive twenty-five cents each for recording such lien; Provided, said animals shall be kept by the owners thereof inclosed in their own pasture or otherwise.

IDAHO.

The owner or person in charge of a stallion, jack or bull has a lien on the dam and offspring, provided that within ninety days after the service he files with the recorder of the county where the dam is situated, a notice containing a particular description of the mare, when served and the amount of lien claimed. This notice operates as a notice to subsequent purchasers and incumbrances in good faith for one year from the date of filing. Provided also, that every owner of a sire charging a service fee shall file a statement under oath, with the auditor of the county in which the sire is kept, "giving the name, age, description and pedigree as well as the terms and conditions upon such sire is advertised for service."

The lien upon the get is valid for eighteen months from the date of birth and has priority over all other liens and encumbrances upon the get, provided that within twelve months from the service the stallioner files with the auditor of the county wherein the service was rendered a statement of account properly verified, giving the amount due and a description of the female.

If in a suit for service fees the court in rendering judgment certifies in the record that the plaintiff has complied with the statute and that the get of the service is subject to the lien, the get is not exempt from execution on such judgment.

ILLINOIS.

"Every owner of a sire charging a service fee, in order to have a lien upon the get of any such sire * * * * shall file a statement, verified by oath or affirmation of the best of his knowledge and belief, with the secretary of the State Board of Agriculture, giving the name, age, descrip-

tion and pedigree, as well as the terms and conditions upon which such sire is advertised for service.

"The secretary of the State Board of Agriculture, upon receipt of the statement as specified above, duly verified by affidavit, shall issue a certificate to the owner of the said sire, a copy of which certificate shall be forwarded to the clerk of the county court in which said sire is stationed or located, and another copy furnished the applicant, which shall be posted by the owner in a conspicuous place where said sire may be stationed, which certificate shall state the name, age, description, pedigree and ownership of said sire, the terms and conditions upon which the sire is advertised for service, and that the provisions of this act, so far as relates to the filing of the statement aforesaid, have been complied with."

The owner who has complied with the statute has a lien on the get of his sire and such get is not exempt from execution on a judgment for the service fee if the court certifies that the statute has been complied with, that the get is subject to the lien and this finding, with a description of the claim, is endorsed on the execution.

INDIANA.

A sire owner in Indiana who takes out a license for his horse has a lien on the get for the amount of the service fee agreed on. If there was no specific agreement, then for the amount of the advertised fee. To make the lien good against third parties, the stallioner must file a notice in the office of the recorder in the county where the owner of the mare resides. This notice must be filed within one year from the date of service, and gives the stallioner a lien as against third parties for one year after such filing. This constitutes notice to all of the existence of the lien and the stallioner may take the get in any township in the state, in which it may be found, in an action before a justice of the peace in that township. The notice must contain a description of the dam, owner's name, name of sire, name and residence of its owner, date of service and amount of service fee, together with any written agreement which may have been made at the time of service.

Where the mare and get remain in the hands of the same owner who brought the mare for service, the licensed sire owner will have a lien for two years from the date of service, and one year from the date of filing notice when the colt has been disposed of.

Any owner who disposes or attempts to dispose of a female without providing for the payment of the service

fee or who falsely represents that she has been bred to an improved sire other than the one to which she has been bred, is liable to a fine of $50.

INDIAN TERRITORY.

The owner or keeper of a jack or stallion has a lien on the mare for the service fee.

"Such lien shall attach after the time of service of any mare by any jack or stallion, and shall be enforced or foreclosed at any time on or after maturity of the debt as agreed upon by the parties to the contract, and may be enforced or foreclosed in the same manner as laborers' liens are enforced by law."

The lien may be enforced after the mare has passed to the possession of third parties.

IOWA.

Any owner or keeper of any stallion, kept for public service, or for sale, exchange or transfer, who represents such animal to be pure-bred shall cause the same to be registered in some stud book recognized by the Department of Agriculture at Washington, D. C., and obtain a certificate of registration, which must be submitted to the secretary of the State Board of Agriculture of the state of Iowa. If such registration is found to be correct and genuine he shall issue a certificate setting forth the name, sex, age and color of the animal and the volume and page of the stud book in which such animal is registered.

Anyone who represents his animal to be pure-bred shall place a copy of the certificate of the State Board on the door or stall of the stable where the animal is usually kept. Any owner or keeper of a stallion kept for public service, for which a state certificate has not been issued, must advertise such horse by having printed hand bills or posters, not less than five by seven inches in size, and such bills or posters must have printed thereon immediately preceding or above the name of the stallion, the words "grade stallion," in type not less than one inch in height, said bills or posters to be posted in a conspicuous manner at all places where the stallion is kept for public service. The certificate may be transferred to a purchaser through the secretary of the State Board of Agriculture.

Any person who shall fraudulently represent any animal, horse, cattle, sheep or swine, to be pure-bred, or any person who shall post or publish, or cause to be posted or published, any false pedigree or certificate, or shall use any stallion for public service, or sell, exchange or

transfer any stallion, representing such animal to be pure-bred, without first having such animal registered, and obtaining the certificate of the State Board of Agriculture, as above provided, or who shall violate any of the provisions of this act, shall be guilty of a misdemeanor, and be punished by a fine of not more than $100, or imprisoned in the county jail not exceeding thirty days, or by both such fine and imprisonment.

KANSAS.

The owner of any stallion, jack or bull has a lien on the offspring of his animal for the service fee, for one year after the birth of such offspring: "Provided, That at or before the time of foaling or birth of said offspring, the owner of the stallion, bull or jack shall file in the office of the register of deeds of the county where the dam of said offspring is kept, a description of the dam on whose offspring he claims a lien. Such a lien shall be enforced as other liens upon personal property under chapter 142 of the Session Laws of 1872 are enforced."

KENTUCKY.

"The licensed keepers of stallions, jacks and bulls shall have a lien upon the get of such stallion, jack or bull for one year after the birth of the same for the payment of the service fee; but the get of such animals shall not be subject to the lien when a receipt for said services is shown by the owner of such get."

LOUISIANA.

"No person or association of persons shall be permitted to stand any stud horse, jack or bull in this state without having first obtained a license from the parish or municipal corporation in which such stud horse, jack or bull shall stand; which license shall be equal in amount to the greatest sum charged for the services of the same; provided that no person or association of persons who shall stand any stud horse, jack or bull without having first obtained the license provided for in this section, shall be permitted to recover any amount for such service.

"Any person or association of persons who shall stand any stud horse, jack or bull in compliance with the terms of this act, shall have a lien and privilege upon the issue of said stud horse, jack or bull for the period of one year, which lien and privilege shall prime all others."

MAINE.

"The owner or keeper of any stallion for breeding purposes, before advertising, by written or printed notices, the service thereof, shall file a certificate with the register of deeds in the county where said stallion is owned or kept, stating the name, color, age and size of same, together with the pedigree of said stallion as fully as attainable, and the name of the person by whom he was bred. Whoever neglects to make and file such certificate shall recover no compensation for said services, and, if he knowingly and wilfully makes and files a false certificate of the statements aforesaid, he forfeits one hundred dollars, to be recovered by complaint, indictment or action of debt, to the county where the offense is committed. * * * Whoever knowingly exhibits, makes or gives a false pedigree of any animal, shall be punished by imprisonment for not more than ninety days, or by fine not exceeding three hundred dollars, or by both such fine and imprisonment."

MARYLAND.

Every owner or agent who may have the custody or control of any stallion, who shall charge a fee for the services of such stallion, shall before advertising or offering such service to the public for any fee, reward or compensation, file with the clerk of the circuit court for the county in which such owner or owners, agent or agents, reside, or in which such stallion shall be kept for service, or if such service shall be offered in the city of Baltimore, then with the clerk of the court of common pleas, a written statement giving the name, age, pedigree and record, if known, and if not known then that the same is unknown, the description, terms and conditions upon which such stallion will serve. Upon filing such statement the clerk of the circuit court for the county, or of the court of common pleas of Baltimore, as the case may be, shall issue a certificate or license to the owner or owners, agent or agents, having the custody and control of such stallion that such a statement has been filed in his office; the owner or agent or agents of the owners of such stallion, shall then post a written or printed copy of the statement so filed with such clerk, in a conspicuous place in each locality in which said stallion shall be kept for service.

Every owner or agent who shall proclaim or publish a false or fraudulent pedigree or record, or statement of any kind regarding any stallion or who shall neglect or refuse to comply with the provisions of above section shall forfeit all fees for the services of such stallion, and the per-

son or persons who may be deceived or defrauded by such false or fraudulent pedigree or record or statement may sue for and recover in any court of competent jurisdiction such damages as may be shown to have been sustained by reason of such false and fraudulent representations.

Whenever the owner or agent of an owner or owners of any stallion shall have complied with the foregoing provisions of this sub-title, the services of such stallion shall become a lien on each mare served, together with the foal resulting from such service, for the amount agreed upon between the owner of the mare and the owner of the stallion at the time of the service, or in the event of no such agreement, then in such an amount as is specified for the service of such stallion in the statement hereinbefore required to be filed with the clerks of court of the respective counties or of Baltimore City.

Any person entitled to a lien under this sub-title, shall file a claim or statement of the same in the office of the clerk of the court for the county where the owner of the mare resides, or if such owner is a resident of Baltimore City, then said lien shall be filed in the office of the clerk of the superior court of Baltimore City; provided, that the statement of said lien shall be filed within twelve months from the date of the service of the stallion for which the lien is claimed, and that the lien shall terminate at the end of six months from the date of the filing of the same.

Before standing any stallion or jackass the owner must pay to the clerk of the circuit court of some county in the state the highest sum which he intends to ask or receive for the season of one mare. This payment to the clerk must not be less than $10 and the receipt of the clerk is a license for one year and exempts the stallion or jack from all other state tax. Any owner standing his stallion or jack without a license forfeits twice the sum above mentioned. Upon information under oath, the sheriff may seize any stallion or jack standing without a license.

MASSACHUSETTS.

"The owner or keeper of a stallion for breeding purposes shall, before advertising the service thereof, file a certificate of the name, color, age, size and pedigree, as fully as obtainable, of said stallion, and of the name of the person by whom he was bred, with the clerk of the city or town in which said stallion is owned or kept, who shall, upon payment of a fee of twenty-five cents, record the same in a book to be kept for that purpose. Whoever

neglects to make and file such certificate shall recover no compensation for the services of his stallion, and whoever knowingly and wilfully makes a false certificate shall be punished by a fine of $100 for each offense."

MICHIGAN.

The stallioner has a lien on the get of his animal, for the period of six months after the birth of get. In order to obtain this lien the stallioner must post bills or posters conspicuously at all places where the stallion is stood for service and must post at least three along the route that shall be travelled by the stallion. These posters must contain a correct statement of the age and breeding of the stallion, and of the terms of service, and having been posted as above provided, constitute a contract between the stallioner and owner of the dam. This lien is not good as against subsequent purchasers of the dam in good faith unless the stallioner files with the clerk of the township where the dam is owned at the time of service, a notice of the lien, a copy of the contract and a description of the dam.

The lien may be enforced by seizure of the colt, but no action for the service fee or seizure of the colt shall be had until after demand for payment, and no recovery can be had if the stallioner has wilfully or fraudulently misrepresented the breeding of his stallion.

MINNESOTA.

Any one standing a stallion for public service must cause the name, description and pedigree to be enrolled in the college of agriculture of the University of Minnesota, upon which a license is issued to him. The license must be recorded with the register of deeds in any county where the stallion is used for public service. In order to procure his license the stallioner must present a certificate from a licensed, qualified and reputable veterinarian to the effect that the stallioner is free from infectious, contagious or transmissible disease or unsoundness. He must also furnish the certificate of pedigree of the stallion and all other necessary papers relating to the breeding and ownership. The stallion registration board has the power to refuse a certificate of enrollment to a diseased stallion and on the same ground to revoke a license certificate previously issued.

During the breeding season copies of the license certificate must be posted conspicuously on the main door leading to the building where the stallion stands for public

service. Bills and advertisements of a licensed stallion must contain a copy of the license certificate, but must not contain illustrations, pedigrees or other matter that is untruthful or misleading. The registration fee is two dollars with an annual renewal fee of one dollar. Stallions must be examined every four years until ten years of age, and after the first examination are exempt at ten years of age or over. Upon change of ownership the license certificate may be transferred by the secretary of the board of enrollment. Violators of any of the provisions of the act are liable to a fine of from $25 to $100 for each offense.

MISSISSIPPI.

A privilege tax of $5 is imposed on all stallions or jacks which stand for fee. The owner of a stallion, jackass or bull has a lien on its offspring for the price agreed to be paid therefor, and may enforce such lien in the manner provided for enforcing the lien of stable keepers, subject to all of the provisions of the chapter on that subject. "But if the owner shall have falsely represented the breeding, registration, or pedigree of his stallion, jackass or bull, by advertisement or otherwise, he shall not have a lien * * * as against any person who acted under the belief that such representation was true; and, in such case, the owner of the animal shall not have any claim for the service of the stallion, jackass or bull."

This lien runs for twelve months after the birth of offspring and is good against the world, including subsequent purchasers for a valuable consideration without notice.

MISSOURI.

The owner or keeper of any stallion, jack or bull may advertise the terms upon which he will let any such animal to service, by publication in some newspaper of the county where the animal is kept, for sixty days during the season of each year, or by printed hand-bills conspicuously posted during such period, in four or more public places in the county, including the place where the animal is kept; and such publication or posting shall impart notice thereof to the owner of any female served by such sire during that season, and the owner of the female served shall be deemed to have accepted and assented to the said terms, when so published or posted.

"When the terms of service as posted or published, shall provide that the offspring of the service will be held for the service fee, the owner of the sire shall have a lien on the offspring of any female served, for the period of one

year after the birth thereof, which said lien shall be preferred to any prior lien, mortgage or incumbrance whatever; and the publication or posting shall be deemed notice to any third party of the existence of such lien.

"Any person who shall sell, convey or dispose of any animal upon which there exists a lien as created in the preceding section, without informing the person to whom the same is sold or conveyed that such lien exists, or who shall injure or destroy such animal, or aid or abet the same, for the purpose of defrauding the lienor, or who shall remove or conceal, or aid or abet in removing or concealing such animal with intent to hinder, delay or defraud such lienor, shall be deemed guilty of a misdemeanor."

The giving of a false pedigree or falsely representing the animal to be eligible to registry forfeits all claim for service fee, and all benefit of the lien law. The stallioner may enforce his lien by replevin.

MONTANA.

Every owner or agent who may have the control of any stallion, who shall charge a fee for the service of such stallion, shall, before offering or advertising such services to the public for any fee, reward or compensation, file with the clerk of the county in which owner or owners or agents reside, or where such stallion shall be kept for service, a written statement, giving the name, age, pedigree and record if known, if not that the same is unknown, description, terms and conditions upon which such stallion will serve. Upon filing such statement the county clerk shall issue a certificate or license to owner or owners or agents, having custody and control of such stallion, that such a statement has been filed in his office; the owner or owners or agents of such stallions shall then post a written or printed notice of a copy of the statement so filed with the county clerk in a conspicuous place in each locality in which said stallion shall be kept for service.

Every owner or agent who shall proclaim or publish a false or fraudulent pedigree or record or statement of any kind regarding a stallion, or who shall neglect or refuse to comply with the above provisions, shall forfeit all fees for the services of such stallion and the person or persons who may have been deceived or defrauded by such false or fraudulent pedigree or record or statement, may sue and recover in any court having jurisdiction, such damages as may be shown to have been sustained by reason of false representation and fraud.

Whenever the owner or agent of any stallion shall have complied with the foregoing provisions of this act, the services of such stallion shall become a lien on each mare served, together with a foal of such mare served from such service in an amount agreed upon between the parties at the time of service; or, if agreement was not entered into by them, in such amount as specified as service fee of stallion or stallions in the statement of the owner or agent filed with the county clerk; Provided, a notice of lien shall be filed within twelve months after such service; such lien shall terminate at the end of the year from the date of filing notice thereof, unless within that time an action shall be commenced for the enforcement thereof.

NEBRASKA.

"Owners of stallions, jacks and bulls of the state of Nebraska shall have a lien upon the get of such stallion, jack or bull for the period of nine months after the birth of same for the payment of the services of said stallion, jack or bull; provided that the owner of such stallion, jack or bull shall have filed in the office of the clerk of the county in which such get is owned a description of the same with date of birth within one hundred and twenty days after the birth thereof. Said lien may be at any time after the filing of said description foreclosed in manner and form as provided by law for the foreclosing of chattel mortgages."

NEVADA.

"Any person who shall sell any stallion within the limits of this state, intended for breeding purposes, and who shall give a false or erroneous written pedigree, shall be deemed guilty of a felony, and on conviction thereof, shall be punished by imprisonment in the state prison for a term of not less than one year nor more than five years, and such person so offending shall be liable to the person so purchasing for all damages he may sustain by reason of such false record of pedigree; provided, that the provisions of this act shall not apply to any representation concerning pedigree unless the same has been reduced to writing and signed by the party so making the same.

"Every person who shall keep a stallion for the service of mares shall keep posted in a conspicuous place on or near the stable where such stallion is kept, a full and complete pedigree of such stallion headed by the name by which said stallion is known; provided, that in cases where the pedigree is unknown such fact shall be inserted in such notes in lieu of pedigree. Any person violating

the provisions of this section shall be deemed guilty of a misdemeanor, and on conviction thereof shall be fined in any sum not less than one hundred dollars nor more than five hundred dollars, and as a further punishment for the offense the owner or keeper of such horse shall have no legal right to collect any charges made for services of such horse."

There is no lien given to the stallioner.

NEW HAMPSHIRE.

"Every person who offers for hire the service of a stallion for breeding purposes shall make a certificate stating the name, color, age, size and pedigree (so far as known) and the name and residence of the person by whom he was bred, and shall cause the certificate to be recorded by the secretary of the Board of Agriculture. He shall also insert a copy of the certificate in all posters and notices advertising the stallion, and shall give a copy of it to the keeper of each mare served by the stallion for hire."

Neglect to make or record the certificate, or neglect to give a copy of it to the keeper of the mare forfeits the service fee "unless he shall show that the person had actual knowledge of it at the time of service." Making false statements in the certificate or giving a false copy of it to a mare owner makes the stallioner liable to a fine of $100. Compliance with this statute gives the stallioner a preferred lien on the colt until it is eight months old, and colt may be attached at any time after it is four months old.

NEW JERSEY.

There is no stallion law in this state.

NEW MEXICO.

There is no stallion lien law in New Mexico.

NEW YORK.

"On complying with the provisions of this article, the owner of a stallion shall have a lien on each mare served together with the foal of such mare from such service, for the amount agreed on at the time of service, or if no agreement was made, for the amount specified in the statement hereinafter required to be filed, if within fifteen months after such service he files a notice of such lien in the same manner and place as chattel mortgages are required by law to be filed. Such notice of lien shall be in writing, specifying the person against whom the claim is made, the amount of the same and a description of the

property upon which the lien is claimed, and such lien shall terminate at the end of eighteen months from the date of such filing, unless within that time an action is commenced for the enforcement thereof, as provided in the code of civil procedure for the foreclosure of a lien on chattels.

"A person having the custody or control of a stallion and charging a fee for his services, shall, before advertising or offering such services to the public, file with the clerk of the county in which he resides or in which such stallion is kept for service, a written statement giving the name, age, description and pedigree if known, and if not, stating that the same is unknown, of such stallion and the terms and conditions on which he will serve. On filing such statement, the county clerk shall * * issue a certificate to such person, that such statement has been so filed and recorded." A copy of this statement and certificate must be posted in a conspicuous place in each locality in which the stallion is kept for service.

Any one who neglects or refuses to file and post such statement as required, or who therein falsely states the pedigree of the stallion, forfeits all fees for the service and is liable to any one injured thereby.

NORTH CAROLINA.

The owner of a stud horse, jack or bull has a lien on the get which is in force until the service fee is paid. The colt or calf is not exempt from an execution for the payment of the service fee by reason of any personal property exemptions; Provided, the stallioner institutes action to enforce his lien within twelve months from the birth of get.

NORTH DAKOTA.

"Filing Statement of Pedigree Pre-requisite. Every owner of a sire charging a service fee, in order to have a lien for service upon the offspring of any such sire under the provisions of this chapter, shall file a statement, verified by oath, to the best of his knowledge and belief, with the commissioner of agriculture and labor, giving the name, age, description and pedigree or breeding of such sire, so far as known, as well as the terms and conditions upon which he is advertised for service.

"The commissioner of agriculture and labor, upon receipt of the statement specified in the last section, shall issue a certificate to the owner thereof, who shall file a copy of such certificate with the register of deeds of the county or counties in which such sire shall stand for service, and

copies of such certificate shall also be posted conspicuously in all places where such sire shall stand for service, which certificate shall state the name, age, description, pedigree and ownership of such sire and the terms and conditions upon which the sire is advertised for service. Such certificate shall be procured and filed prior to the service of such sire, and all certificates procured and posted according to this section shall be operative as long as the terms and conditions remain the same. The original certificate shall follow the sire in all changes of ownership and all transfers shall be recorded in the office of the commissioner of agriculture and labor and a bill of sale filed with the register of deeds, as is provided for the filing of the original certificate, and that the provisions of this chapter so far as relates to the filing of the statement aforesaid have been complied with.

"The owner of any sire receiving such certificate shall have a lien upon the offspring of such sire and upon the female served, upon filing at any time within eight months after the service, in the office of the register of deeds of the county in which such female is kept at the time of service, a statement of the account thereof, together with a description of the female served. Such lien shall exist for a period of three years from the date of filing the statement and shall have priority over all other liens and incumbrances upon the offspring and the female served.

"After the expiration of nine months from the filing of the lien, or at any time after an attempt shall be made to dispose of the female, or remove her from the county, the lien may be enforced by a sale of the property covered thereby, upon the notice and in the manner provided for the foreclosure of mortgages upon personal property."

OHIO.

"That the keeper of any stallion or jack shall have a lien upon the get of the same for the period of twelve months after birth of the same, for the payment of the service of any such stallion or jack. Such keeper or owner may enforce said lien by replevin of the property before any justice of the peace of the township where the property is found, and after gaining possession of the same, he may, after first giving ten days' notice to the reputed owner thereof of his intention to do so, sell the same at public sale after two weeks' notice of the time and place of sale by notices posted up in five conspicuous and public places in the township where proceedings in replevin are had, and out of the proceeds of sale retain the amount due him for said service, with the costs by him incurred in

said replevin suit, and accounting to the owner for the surplus realized by said sale. And the owner of any such stallion or jack, when payment is made to him or his agent, for any such get, shall deliver to the payee a receipt in full for the amount so paid, and stating for what paid. And any such keeper or owner of any stallion or jack, who misrepresents the pedigree, or fails to publish a correct pedigree of his stallion or jack, when excellency of good qualities are claimed on account thereof, shall, upon proof of such misrepresentation, forfeit the services in any case when legally contested and proven, and shall be otherwise punished as provided by law against the use of false pedigree."

OKLAHOMA.

"The owner or keeper of any stallion, jack or bull may advertise the terms upon which he will let such animal to service by publication thereof in some newspaper in the county where such animal is kept for a period of sixty days during the season of each year, or by printed handbills conspicuously posted during such period in four or more public places in said county, including the place where such animal is kept; and the publication or posting as aforesaid of the terms of such service shall impart notice thereof to the owner of any female served by such stallion, jack or bull during such season; and in all action and controversies in respect to the foal or other product of such service the owner of such female animal so served shall be deemed to have accepted and assented to said terms, when so advertised or posted as provided herein.

"When the said terms of such service by any such animal, published or posted as provided in the above section, shall provide that the foal or other product of such service will be held for the money due for the services of such stallion, jack or bull, then and in that event the owner or keeper of any such animal may file with the recorder of deeds of the county in which such animal is kept for service, a certificate signed by the owner of the female bred, or his representative, also the owner or keeper of the male animal rendering the service, stating the terms of such service, a description of the female served, also a description of the male rendering the service, the date of service and acceptance of terms by owner of female, and such certificate, if filed within three months after the rendering of such srvice, shall become and continue a lien on the offspring for the period of six months after the birth thereof, and the filing of such certificate shall be constructive notice to any third party of the existence of

the lien; Provided, that as between the owner of any stallion, jack or bull, as provided in the preceding section and the owner of any female served, a lien shall exist notwithstanding no certificate as herein provided shall be filed or notice given as in this article provided."

The recorders of the several counties are required to keep a book especially for the recording of these certificates.

If the sire owner advertises a false pedigree, or falsely represents his animal to be eligible to be recorded, he loses all claim for the services of that animal and all benefit of the stallion law.

The lien is enforced by replevin of the animal on which it is claimed, and the replevin suit will take the course and be decided as are other replevin suits.

OREGON.

The owner of any stallion within the state may file with the county clerk of any county therein, on or before the 31st day of December of each year, a list of mares served by such stallion during that year upon which such owner claims a lien for the service fee of such stallion for such year; and from the time of filing such lists and claim for liens the owner of such stallion shall have and hold a lien upon each mare therein described, and upon her colt, if any for the amount of the service fee of such stallion due on such mare. Such list and claim for liens shall contain the name and a brief description of each of such mares, the name of the owner of each mare, the terms upon which such mare was bred, the amount of service fee due on such mare, the time the same is payable, and a statement that the owner of such stallion claims a lien on such mare and her colt, if any, by such stallion for the amount of said service fee, and such list and claim shall be subscribed and verified by the oath of the owner of such stallion or his agent.

The liens secured and provided for by the preceding section shall expire in one year after the 31st day of December on or before which said claim for liens may be filed as aforesaid, unless the same shall be renewed within thirty days before the expiration thereof by the owner or his agent, making and filing an affidavit to be attached to the original list and claim for liens, setting forth the service fees therein still remaining unpaid, and then such affidavit shall renew and extend such lien for another year. All persons holding any such lien may enforce the same against the mare and colt, or either of them, by action in any justice court in any county where such mare or colt,

or either of them, may be found, and such court may render judgments that such lien exists against such mare or colt, or both of them, and direct that they be sold to satisfy the said service fee, or any part thereof remaining unpaid, together with the costs and disbursements of said action, in the manner provided by law for the sale of personal property upon execution; and in all actions to enforce such liens both the owner of such mare named in said claim for lien and any person claiming any interest or title to such mare or colt, may be made parties thereto, but any such party may set up any defense to the claim of the plaintiff in such action which the owner of the mare, at the time of breeding, if a party, would be entitled to make, and the filing of such lists and claim for lien as aforesaid shall be constructive notice thereof to all persons buying or in any way dealing with or in regard to any such mare or her colt after such mare shall have been bred, and any transfer or purchase of such property shall be subject to such lien.

PENNSYLVANIA.

All stallions, used for breeding purposes, must be enrolled by name, description and pedigree, with the State Livestock Sanitary Board, and the certificate of enrollment must be recorded by the prothonotary of the county or counties where the stallion is used for public service.

"In order to obtain the license certificate herein provided for, the owner of such stallion shall file a certificate of soundness, signed by a duly qualified veterinarian, or, in lieu thereof, he may make oath before a notary public that, after diligent inquiry, such stallion is, to the best of his knowledge, free from hereditary, contagious or transmissible unsoundness or disease, and shall forward this veterinarian's certificate, or his affidavit, together with the stud-book certificate of registry of the pedigree of the said stallion, and any other documents that may be necessary to define and describe his breeding and ownership, to the State Livestock Sanitary Board."

The board may in its discretion refuse a license to a stallion because of transmissible physical unsoundness or because of the pedigree not being recorded in a book recognized by the United States Department of Agriculture.

Copies of this license certificate must be posted in a conspicuous place both within and upon the outside of the main door leading into any stable or building where the stallion stands for public service, and must be kept in place during the entire breeding season.

Bills, posters or advertisements must contain a copy of the certificate of enrollment.

Upon transfer of ownership of the stallion, the certificate may be transferred to the purchaser by the state board. Violation of any of the provisions of the act is punishable by fine not to exceed $50.

RHODE ISLAND.

There is no regulation of the service of stallions in this state, and no lien is given.

SOUTH CAROLINA.

"The owner of any stock horse, jack, bull, boar or ram, kept by him for the purpose of raising from, having a claim by contract against the owner of any mare or cow, or other stock, for service, shall have a prior lien on the issue of such mare, cow or other stock for the amount of such claim; provided, an action shall be instituted to enforce such claim, by suit, before a magistrate or other officer having jurisdiction, within twelve months from the time such shall have accrued."

SOUTH DAKOTA.

The owner of a stallion or bull has a lien upon the mare or cow and upon the offspring, provided that within ninety days after the service, he files with the register of deeds in the county where the mare or cow is situated, a notice in writing, containing a particular description of the said mare or cow, when served, and the amount of lien claimed upon the same, which notice when so filed is notice to subsequent purchasers or incumbrancers for one year after filing. (Statute of 1883, not repealed.)

Law of 1890.—Every owner of a sire, charging a service fee, in order to have a lien on the get of such sire must file a statement, verified by oath or affirmation, to the best of his knowledge and belief, with the county clerk or auditor, giving the name, age, description and pedigree, as well as the terms and conditions upon which such sire is advertised for service. Upon filing this statement the owner gets a certificate, "a copy of which certificate shall be filed with the clerk of the court in the county where the said sire is stationed or located, and other copies furnished the applicant, which certificates shall be posted by the owner in conspicuous places where said sire may be stationed for service, which certificate shall state the name, age, description, pedigree and ownership of said sire, the terms and conditions upon which the sire is advertised for service,

and that the provisions of this article so far as relates to the filing of the statement aforesaid, have been complied with."

Having obtained his certificate, the owner of the sire has a prior lien upon the get of the sire, for eighteen months from the date of birth, "Provided, said owner or owners shall within twelve months from the time of rendition of such service by such certified sire file for record a statement of account verified by affidavit or affirmation with the recorder of the county wherein the service has been rendered of the amount due such owner or owners for said service, together with a description of the female served."

No get of such sire is exempt from execution on a judgment for service fee, provided the court rendering the judgment certifies on the record, and on the execution with a description of the dam that the progeny sought to be levied upon is subject to the lien.

TENNESSEE.

Any person keeping a stallion, jack, bull or boar for public use has a lien on the offspring of the same for the season to be paid.

This lien continues for ten months from the birth of offspring and is enforced as landlords' liens are enforced. The pedigree under oath of any stallion, jack or bull, claimed to be pedigreed live stock, and used for public breeding must be filed and recorded with the clerk of the county court, presumably in the county where the animal is kept or stood for service. During the breeding season a certified copy of the pedigree as recorded must be posted conspicuously in three different places in the county where the owner lives or the animal is stood for service. Anyone who knowingly posts or records a false pedigree is liable to a fine of from $25 to $100.

TEXAS.

"The owner or keeper of any stallion, jack, bull or boar, who keeps the same confined for the purpose of standing him for profit, shall have a preference lien upon the progeny of such stallion, jack, bull or boar, to secure the payment of the amount due such owner or keeper for the services of such stallion, jack, bull or boar, and such lien shall exist by reason of the force and effect of the provisions hereof, and it shall never be necessary in order to secure and fix said lien to secure, file or register any contract or statement thereof with any officer, nor shall it be necessary that the owner of such progeny execute any con-

tract whatever, but that such preference lien may be foreclosed in the same manner as the statutory landlord's lien is by law enforced; provided that where parties misrepresent their stock by false pedigree, no lien shall obtain.

"The lien herein provided shall remain in force for a period of ten months from the birth of said progeny, but shall not be enforced until five months shall have elapsed after such birth."

UTAH.

"Every person, firm or company, standing, traveling or offering for sale any pure-bred or grade stallion in this State, shall cause the name, description and pedigree of such animal to be enrolled by the said board, and procure a certificate of such enrollment from such board, which shall thereupon be presented to, and recorded by the register of deeds of the county in which said stallion is used or sold for public service.

"In order to obtain the license certificate herein provided for, the owner of each pure-bred or grade stallion shall make oath before a notary public, or any other officer authorized to administer oaths, that such stallion is, to the best of his knowledge, free from hereditary, contagious or transmissible unsoundness, or disease, or, in lieu thereof, may file a certificate of soundness signed by a duly qualified veterinarian who shall be a graduate of a recognized veterinary college, and shall forward this affidavit, or veterinarian's certificate, together with the stud book certificate of registry of the pedigree of the said stallion and other necessary papers relating to his breeding and ownership, to the Board of Horse Commissioners.

"The owner of any stallion, standing for public service in this State shall post and keep affixed, during the entire breeding season, copies of the license certificate of such stallion, issued under the provisions of the next preceding section, in a conspicuous place where said stallion stands for public service.

"Every bill, poster, or advertisement issued by the owner of any stallion, enrolled under this act or used by him for advertising such stallion, shall contain a copy of its certificate of enrollment.

"Every person in the State of Utah complying with the provisions of this Act, shall have a lien on the mare and a first lien upon the offspring of such service to the amount of the agreed service fee for the period of eighteen months after service, and it shall not be necessary in order to secure and fix said lien to secure, file or register any con-

tract or statement thereof with any officer, nor shall it be necessary that the owner of such mare or foal execute any contract whatever; the said lien may be foreclosed in the same manner that a mortgage upon personal property is foreclosed.

"The fee for examination and enrollment of pedigree is $2 and the certificate may be transferred to a new owner of the horse upon payment of a further fee of fifty cents."

VERMONT.

"Colts foaled in this state shall be subject to a lien to secure the payment of the service fee, which shall continue in force until the colt is eight months old, and may be enforced by attachment of such colt after it is four months old; said lien shall take priority of any other claim subject to the following conditions:

"The owner or manager of the stallion shall, annually, file in the office of the clerk of the town where such stallion is kept, on or before the first day of April, or within thirty days after such stallion is brought into such town, a declaration of an intention to claim such lien and a statement containing the name and age of such stallion and his pedigree for two generations, if known, and the terms of service; a copy of which statement shall be furnished the owner of each mare served, and all bills or posters advertising such stallion shall contain a copy of such statement; and when the owner or manager of a stallion has complied with all the requirements of this section, if the owner or person in whose name a mare has been mated with such stallion for breeding purpose disposes of such mare by sale or otherwise before foaling time without first settling with the owner or keeper for the service of the stallion or within ten days after the disposal of the mare, he shall be subject to all and the same penalties that he would for disposing of a colt encumbered by a lien; provided that if such mare is returned for trial to the stallion after three weeks from the date of the last service and found not to have become pregnant and is not again served during that breeding season, the provisions of this section shall not apply to the disposal of such mare.

"If the owner or manager shall, in such statement make a false representation regarding the pedigree of such horse, the lien for such service shall be discharged and the service fee thereby secured shall be forfeited.

"A person who owns, keeps or uses a stallion of two years of age or over for breeding purposes in this state, except for his own mares, shall cause such stallion to be

registered in the office of the town clerk of the town in which he is kept or used. The owner or keeper of such stallion shall furnish to the town clerk in the town where such registration is made, a certificate of the name, age, color, size, name of breeder and pedigree in full of such stallion to the third ancestor on the side of both sire and dam, if known, and as much of such information as is not given shall be acknowledged as not known and so stated, and pedigrees given in advertising such stallions shall be as recorded in the town clerk's office. The town clerk shall record such statement in a book kept for that purpose and shall receive from the applicant the sum of fifty cents for each stallion so registered and shall furnish the owner or keeper procuring such registration a certified copy of the same. The owner or keeper of a stallion who fails to comply with the provisions of this act shall be fined not more than fifty dollars nor less than ten dollars and shall receive no compensation for breeding services of such stallion. A person who makes a false certificate under the provisions of this section shall be fined one hundred dollars to the use of the town where such stallion is registered."

VIRGINIA.

The owner of a licensed stallion, jackass or bull has a lien on its offspring for a period of six months after the birth thereof. If the claim for lien is recorded in the case of a bull it has priority over other liens and is good against subsequent purchasers for value. The statute does not define the extent of the lien in the case of stallion or jackass but simply provides that the lien is in force from its recordation. The license is necessary before an owner can stand a sire, for compensation, and in the case of stallions and jackasses the license fee is $10 and for bulls $2.50.

WASHINGTON.

"Every owner of a sire having a service fee, in order to have a lien on the female served, and upon the get of any such sire, under the provisions of this act for such service, shall file for record with the county auditor of the county where the said sire is kept for service, a statement verified by oath or affirmation to the best of his knowledge and belief, giving the name, age, description and pedigree, as well as the terms and conditions upon which such sire is advertised for service; provided, that owners of sires who are not in possession of pedigrees for such sires shall not be debarred from the benefits of this act."

Upon filing such statement the owner will get a certificate which must be posted by him in a conspicuous place

where the sire is stationed for service. Having complied with the statute, the owner has a lien on the female served for one year from the date of service, and on the get for one year from the date of birth, provided the owner files with the county auditor of the county where the service was rendered, a statement showing the amount due and giving a description of the female served. This statement must be on oath and must be filed within six months from the date of service or the date of birth, according whether the lien is to be on dam or offspring. This lien is a preferred lien and is foreclosed as other liens on personal property.

WEST VIRGINIA.

The owner of a stallion, jack or bull has a lien on the offspring of his animal if the service was by contract with the owner of the female or his agent, at the time of service. To perfect or enforce his lien the stallioner must within six months from the birth of get file before some justice of the county where the get may be, the affidavit of himslf or of "some credible person," stating the amount of lien, that it is due by contract and giving a description of the foal or calf on which the lien is claimed. "Upon the filing of such affidavit, the justice shall issue a warrant to the sheriff or to a constable of the county who shall distrain the colt or calf for the amount claimed and the same shall be disposed of as if taken for distress for rent."

WISCONSIN.

Every person, firm or company using any stallion or jack for public service must enroll the name, description and pedigree in the department of horse breeding of the University of Wisconsin, and record the certificate of enrollment with the register of deeds of the county in which the stallion or jack is used for public service.

In order to obtain this license certificate the owner must make oath before a notary public, or any officer authorized to administer oaths, that the stallion or jack is, to the best of his knowledge, free from hereditary, contagious or transmissible unsoundness or disease, "or in lieu thereof, may file a certificate of soundness, signed by a duly qualified veterinarian, who shall be a regular graduate of a recognized veterinary college, or by a registered veterinarian who shows proof that he was in practice in this state for a period of five years prior to the year 1887 and shall make oath to said certificate before a notary public, or any officer duly authorized to administer oaths," and the affidavit or veterinarian's certificate, together with the stud book cer-

tificate of pedigree must be sent to the department of horse breeding of the university.

Upon complaint the department of horse breeding may examine a stallion or jack, to discover whether the animal is unsound, but the owner may be represented by a recognized graduate veterinarian. If they do not agree they may appoint a third, whose decision shall be final.

"The owner of any stallion or jack used for public service in this state, shall post and keep affixed during the entire breeding season, copies of the license certificate of such stallion or jack, * * * in a conspicuous place both within and upon the outside of every stable or building where the said stallion or jack is used for public service at his home or elsewhere.

"Each bill and poster issued by the owner of any stallion or jack enrolled under this act, or used by him or his agent, for advertising such stallion or jack shall contain a copy of the stallion's or jack's certificate of enrollment printed in bold face type not smaller than long primer on said bill or poster, and first mentioned thereon the name of the stallion or jack shall be preceded by the words 'pure-bred,' 'grade,' 'cross-bred,' or 'non-standard bred' in accordance with the certificate of enrollment; and it shall be illegal to print upon the poster any misleading reference to the breeding of the stallion or jack, his sire or his dam, or to use upon such bill or poster the portrait of a stallion or jack in a misleading way; and each newspaper advertisement printed to advertise any stallion or jack for public service shall show the enrollment certificate number and state whether it reads 'pure-bred,' 'grade,' 'cross-bred,' or 'non-standard bred.'" (The foregoing paragraph new, 1907.)

The enrollment license fee is two dollars, and biennial renewal fees one dollar each. The certificate may be transferred upon proof of change of ownership, and a duplicate certificate may be obtained upon proof of loss or destruction of the original. Violation of any of the provisions of the act is punishable by a fine of not to exceed $50.

"Every owner of a stallion or jack kept and used for breeding purposes shall have a lien on any colt begotten by such stallion or jack for the sum stipulated to be paid for the service thereof, and may seize and take possession of said colt without process at any time before it is one year old, in case the price agreed upon for such service remains unpaid, and sell the same at public auction upon ten days' notice, to be posted in at least three public places

in the town where the owner of such colt resides, and apply the proceeds of such sale to the payment of the amount due for said service and the expense of such seizure and sale, returning the residue if any to the party entitled thereto; provided no such lien shall be effectual for any purpose as against the innocent purchaser of such colt or the dam thereof for value, unless such owner having a claim for the service of such stallion or jack shall file with the clerk of the city, village or town where the owner of the mare served resides a statement showing that such service has been rendered and the amount therefor."

The foregoing is a part of the old law, not repealed by the new regulative act.

WYOMING.

The stallioner has a lien on mare and colt for the agreed service fee, the lien being prior to subsequent liens or encumbrances, except the lien for taxes.

"A notice of such lien shall within six months after the day of such service be filed in the office of the county clerk of the county in which the mare or colt is held or pastured, or subject to taxation." The statute prescribes the form of the notice. Breeders' liens may be released in the same manner as chattel mortgages. At any time after default in payment for the service, and within one year from the date of service, the holder of the lien may take possession of the mare or colt.

The statute is very explict in directing the manner of sale under this lien. If both mare and colt are taken, the colt must be sold first.

If the owner does not wish to foreclose his lien by taking possession he may have it renewed in the same way that chattel mortgages are renewed.

AMERICAN STUD BOOKS.

American Association of Importers and Breeders of Belgian Draft Horses—J. D. Conner Jr., Wabash, Ind., Secretary.

American Breeders' Association of Jacks and Jennets—J. W. Jones, Columbia, Tenn., Secretary.

American Clydesdale Association—R. B. Ogilvie, Union Stock Yards, Chicago, Secretary.

American Hackney Horse Society—A. H. Godfrey, New York, Secretary.

American Breeders' and Importers' Percheron Registry—John A. Forney, Plainfield, O., Secretary.

American Saddle Horse Breeders' Association—I. B. Nall, Louisville, Ky., Secretary.

American Shetland Pony Club—Mortimer Levering, Lafayette, Ind., Secretary.

American Shire Horse Breeders' Association—Chas. Burgess, Wenona, Ill., Secretary.

American Stud Book (Thoroughbreds)—W. H. Rowe, New York, Registrar.

American Trotting Register Co.—Frank E. Best, Chicago, Registrar.

American Suffolk Horse Association—Alexander Galbraith, Janesville, Wis., Secretary.

Cleveland Bay Society of America—R. P. Stericker, West Orange, N. J., Secretary.

French Coach Horse Society of America—Duncan E. Willett, Oak Park, Ill., Secretary.

French Coach Registry Co.—Chas C. Glenn, Columbus, O., Secretary.

German, Hanoverian and Oldenburg Coach Horse Breeders' Association—J. Crouch, Lafayette, Ind., Secretary.

Morgan Horse Register—Joseph Battel, Middlebury, Vt., Editor.

National French Draft Horse Association—C. E. Stubbs, Fairfield, Ia., Secretary.

Oldenburg Coach Horse Association of America—C. E. Stubbs, Fairfield, Ia., Secretary.

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